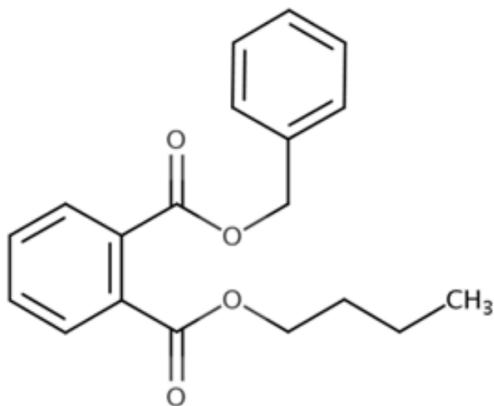


**Data Extraction Information for
Environmental Hazard and Human Health Hazard Animal Toxicology and
Epidemiology for
Butyl benzyl phthalate (BBP)
(1,2-Benzenedicarboxylic acid, 1-butyl 2-(phenylmethyl) ester)**

Systematic Review Support Document for the Risk Evaluation

CASRN: 85-68-7



December 2025

This supplemental file contains information regarding the data extraction results relevant to the *Environmental Hazard Assessment for Butyl benzyl phthalate (BBP)* and the *Human Health Hazard Assessment for Butyl benzyl phthalate (BBP)*. For data extraction, EPA used the TSCA systematic review process described in the *Draft Systematic Review Protocol Supporting TSCA Risk Evaluations for Chemical Substances* (also referred to as the '2021 Draft Systematic Review Protocol'). Any updated steps in the systematic review process for data extraction since the publication of the 2021 Draft Systematic Review Protocol are described in the *Risk Evaluation for Butyl benzyl phthalate (BBP) – Systematic Review Protocol*. EPA conducted data extraction based on author-reported descriptions and results; additional analyses (e.g., statistical analyses performed during data integration into the risk evaluation) potentially conducted by EPA are not contained in this supplemental file.

Environmental Hazard Data Extraction: As explained in Section 6.4 of the 2021 Draft Systematic Review Protocol, key study details (e.g., exposure duration vs. study duration) were extracted from references that underwent data quality evaluation; these study details are available in the tables below. The study details and respective endpoints were organized by first the chemical, then relevant habitat (i.e., aquatic vs. terrestrial), followed by taxa categories (e.g., vertebrates, invertebrates, vegetation), taxonomic groups (e.g., fish, amphibian, mammalian, avian, worms, vascular plants), individual species, and finally exposure duration.

All the references that underwent data quality evaluation using the environmental hazard data quality metrics were extracted regardless of metric ranking and are included in this supplemental file. In the environmental hazard data extraction table, for some studies there were hazard health outcomes with multiple health effect levels extracted from ECOTOX; if all the data for one same health outcome were the same except for the health effect level (e.g., LOEL level), multiple data extraction rows were combined into a single row in the table. All the extracted environmental hazard data will also be available in the *ECOTOXicology Knowledgebase (ECOTOX) database*; moreover, additional data sources and experimental details for these studies will also be available in ECOTOX.

Data Extraction of Rodent Data for the Application of Environmental Hazard: For DEHP, toxicity data gaps were identified for mammalian wildlife relevant to the terrestrial compartment of the environmental hazard assessment. This table includes rodent data for DEHP, which were used as proxy for mammalian wildlife. The rodent data were evaluated following the human health hazard animal toxicity evaluation and extraction process; however, additional data for health outcomes most relevant for environmental hazard assessment were extracted and are listed here.

Human Health Hazard Animal Toxicity Extraction: This supplemental file contains data extraction information for references that underwent data quality evaluation. Listed references with data extractions (1) met PECO screening criteria, (2) were published prior to 2014 which was the preferred literature cutoff date by EPA for data reported in previous assessments, and (3) reported human equivalent dose (HED) derived from points of departure (POD) that contained lowest-observable-effect levels (LOEL) greater than an order of magnitude of the lowest HED lowest-observable-adverse-effect level (LOAEL) identified across existing assessments. For a detailed description on these three criteria, see the *Risk Evaluation for Butyl benzyl phthalate (BBP) – Systematic Review Protocol*. Data from references that were within an order of magnitude of the existing assessment HED were extracted and detailed data were extracted from each individual health outcome within each organ/system. Any co-critical effects were reported along with OQD for the health outcome. A detailed summary statement of each study is reported along with the major limitations as identified by the reviewer and any guidelines used.

Epidemiological Study Information Extraction: All epidemiology references that met PECO screening criteria and further filtering criteria and had an overall quality determination of High, Medium, or Low were extracted as detailed in Section 6.4 of the 2021 Draft Systematic Review Protocol and the *Risk Evaluation for Butyl benzyl phthalate (BBP) – Systematic Review Protocol*. The data extracted include the measured health effect or endpoint, a description of the study population, the specific exposure compound measured and summary levels of exposure, the method of exposure measurement, and a summary of the results. Each health outcome assessed in a reference is extracted separately, and as such, each reference may have more than one record in the data extraction tables, with each record categorized by health outcome.

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Environmental Hazard		
Butyl benzyl phthalate		
Habitat: Aquatic Taxa: Fish		
<i>Cymatogaster aggregata</i> (Shiner Perch)		
790034	Ozretich, R. J., Randall, R. C., Boese, B. L., Schroeder, W. P., Smith, J. R. (1983). Acute toxicity of butylbenzyl phthalate to Shiner perch (<i>Cymatogaster aggregata</i>). <i>Archives of Environmental Contamination and Toxicology</i> 12(6):655-660.	14
<i>Cyprinodon variegatus</i> (Sheepshead Minnow)		
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. <i>Environmental Toxicology and Chemistry</i> 14(9):1569-1574.	16
10617114	Bionomics,, EG&G (1979). Acute toxicity of S-160 to sheepshead minnows (<i>Cyprinodon variegatus</i>).	16
1316224	Bionomics,, Springborn (1984). Acute toxicity of thirteen phthalate esters to the sheepshead minnow (<i>Cyprinodon variegatus</i>) (final report).	19
18110	Heitmuller, P. T., Hollister, T. A., Parrish, P. R. (1981). Acute toxicity of 54 industrial chemicals to sheepshead minnows (<i>Cyprinodon variegatus</i>). <i>Bulletin of Environmental Contamination and Toxicology</i> 27(5):596-604.	21
<i>Danio rerio</i> (Zebra Danio)		
10064182	Battelle, (2018). Fish short-term reproduction assay of benzyl butyl phthalate with zebrafish.	23
2298079	Chen, X., Xu, S., Tan, T., Lee, S. T., Cheng, S. H., Lee, F., F.W., Xu, L., S.J., Ho, K. C. (2014). Toxicity and estrogenic endocrine disrupting activity of phthalates and their mixtures. <i>International Journal of Environmental Research and Public Health</i> 11(3):3156-3168.	31
5932877	Pu, S. Y., Hamid, N., Ren, Y. W., Pei, D. S. (2020). Effects of phthalate acid esters on zebrafish larvae: Development and skeletal morphogenesis. <i>Chemosphere</i> 246:125808.	31
4728379	Roy, N. M., Zambrzycka, E., Santangelo, J. (2017). Butyl benzyl phthalate (BBP) induces caudal defects during embryonic development. <i>Environmental Toxicology and Pharmacology</i> 56:129-135.	33
5490285	Sun, G., Liu, K. (2017). Developmental toxicity and cardiac effects of butyl benzyl phthalate in zebrafish embryos. <i>Aquatic Toxicology</i> 192(9):165-170.	34
8635978	Thomas, D. G., Shankaran, H., Truong, L., Tanguay, R. L., Waters, K. M. (2019). Time-dependent behavioral data from zebrafish reveals novel signatures of chemical toxicity using point of departure analysis. <i>Computational Toxicology</i> 9:50-60.	37
8591199	Truong, L., Reif, D. M., Mary, L. S., Geier, M. C., Truong, H. D., Tanguay, R. L. (2014). Multidimensional in vivo hazard assessment using zebrafish. <i>Toxicological Sciences</i> 137(1):212-233.	45
<i>Fundulus heteroclitus</i> (Mummichog)		
1935997	Kaplan, E., L.A., Nabel, M., Cleef-Toedt, Van, K., Proffitt, A. R., Pylypiw, H. M., Jr (2013). Impact of benzyl butyl phthalate on shoaling behavior in <i>Fundulus heteroclitus</i> (mummichog) populations. <i>Marine Environmental Research</i> 86(Elsevier):70-75.	51
<i>Gasterosteus aculeatus</i> (Threespine Stickleback)		
789690	Wibe, A. E., Billing, A., Rosenqvist, G., Jenssen, B. M. (2002). Butyl benzyl phthalate affects shoaling behavior and bottom-dwelling behavior in threespine stickleback. <i>Environmental Research</i> 89(2):180-187.	53

789532	Wibe, A. E., Fjeld, E., Rosenqvist, G., Jenssen, B. M. (2004). Postexposure effects of DDE and butylbenzylphthalate on feeding behavior in threespine stickleback. <i>Ecotoxicology and Environmental Safety</i> 57(2):213-219.	54
<i>Lepomis macrochirus</i> (Bluegill)		
18050	Barrows, M. E., Petrocelli, S. R., Macek, K. J., Carroll, J. J. (1980). Bioconcentration and elimination of selected water pollutants by bluegill sunfish (<i>Lepomis macrochirus</i>). :379-392.	55
2140000	Bionomics., EG&G (1979). [Sanitized] Acute toxicity of S-160 to Bluegill (<i>Lepomis macrochirus</i>).	55
18064	Buccafusco, R. J., Ells, S. J., Leblanc, G. A. (1981). Acute toxicity of priority pollutants to bluegill (<i>Lepomis macrochirus</i>). <i>Bulletin of Environmental Contamination and Toxicology</i> 26(4):446-452.	58
1359448	Carr, K. H., Coyle, G. T., Kimerle, R. A. (1997). Bioconcentration of (14C)butyl benzyl phthalate in bluegill sunfish (<i>Lepomis macrochirus</i>). <i>Environmental Toxicology and Chemistry</i> 16(10):2200-2203.	58
1359250	Monsanto, (1983). Bioconcentration, distribution and elimination of 14C-labeled santicizer 160 by bluegill (<i>Lepomis macrochirus</i>).	60
<i>Oncorhynchus mykiss</i> (Rainbow Trout)		
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. <i>Environmental Toxicology and Chemistry</i> 14(9):1569-1574.	61
2139998	Bionomics., EG&G (1979). [Sanitized] Acute toxicity of S-160 to Rainbow trout (<i>Salmo gairdneri</i>).	61
5530771	Bionomics., EG&G (1983). Acute toxicity of fourteen phthalate esters to rainbow trout (<i>Salmo gairdneri</i>) under flow-through conditions (final report) report no BW-83-3-1373.	63
680120	Rhodes, J. E., Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). Chronic toxicity of 14 phthalate esters to <i>Daphnia magna</i> and rainbow trout (<i>Oncorhynchus mykiss</i>). <i>Environmental Toxicology and Chemistry</i> 14(11):1967-1976.	65
<i>Oryzias latipes</i> (Japanese Medaka)		
10064181	Battelle, (2018). Fish short-term reproduction assay of benzyl butyl phthalate with Japanese medaka.	65
<i>Oryzias melastigma</i> (Indian Medaka)		
2298079	Chen, X., Xu, S., Tan, T., Lee, S. T., Cheng, S. H., Lee, F., F.W., Xu, L., S.J., Ho, K. C. (2014). Toxicity and estrogenic endocrine disrupting activity of phthalates and their mixtures. <i>International Journal of Environmental Research and Public Health</i> 11(3):3156-3168.	72
<i>Parophrys vetulus</i> (English Sole)		
1337257	Randall, R. C., Ozretich, R. J., Boese, B. L. (1983). The acute toxicity of butyl benzyl phthalate to the saltwater fish English sole, <i>Parophrys vetulus</i> . <i>Environmental Science & Technology</i> 17(11):670-672.	73
<i>Pimephales promelas</i> (Fathead Minnow)		
5353208	ABC, (2008). Determination of the effect of butyl benzyl phthalate (BBP) on the development, growth and reproduction of the fathead minnow (<i>Pimephales promelas</i>).	74
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. <i>Environmental Toxicology and Chemistry</i> 14(9):1569-1574.	79
11581733	Bencic, D. C., Flick, R. W., Bell, M. E., Henderson, W. M., Huang, W., Purucker, S. T., Glinski, D. A., Blackwell, B. R., Christen, C. H., Stacy, E. H., Biales, A. D. (2024). A multiomics study following acute exposures to phthalates in larval fathead minnows (<i>Pimephales promelas</i>) – The potential application of omics data in risk evaluations under TSCA (internal use only).	79
1316188	Bionomics., EG&G (1983). Acute toxicity of fourteen phthalate esters to fathead minnows.	82
1316189	Bionomics., EG&G (1984). Acute toxicity of thirteen phthalate esters to fathead minnows (<i>Pimephales promelas</i>) under flow-through conditions.	83
2139996	Bionomics., EG&G (1979). [Sanitized] Acute toxicity of S-160 to Fathead minnow (<i>Pimephales promelas</i>).	85

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2140001	Bionomics,, EG&G (1979). [Sanitized] Acute toxicity of S-160 in hard water to Fathead minnow (Pimephales promelas).	87
1464882	Harries, J. E., Runnalls, T., Hill, E., Harris, C. A., Maddix, S., Sumpter, J. P., Tyler, C. R. (2000). Development of a reproductive performance test for endocrine disrupting chemicals using pair-breeding fathead minnows (Pimephales promelas). Environmental Science & Technology 34(14):3003-3011.	89
	<i>Sander lucioperca</i> (Zander)	
2298076	Jarmołowicz, S., Demska-Zakęś, K., Zakęś, Z. (2014). Impact of butyl benzyl phthalate on development of the reproductive system of European pikeperch, <i>Sander lucioperca</i> (L.). Acta Veterinaria Hungarica 62(3):397-407.	92
Habitat: Aquatic Taxa: Arthropods		
	<i>Americanopsis bahia</i> (Opossum Shrimp)	
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. Environmental Toxicology and Chemistry 14(9):1569-1574.	96
1359176	Bionomics,, EG&G (1979). Acute toxicity study with santicizer 160 in mysid shrimp (<i>Mysidopsis bahia</i>) with cover letter dated 100692 and attachment.	96
5530739	Bionomics,, Springborn (1988). Acute toxicity of benzyl butyl phthalate to mysid shrimp (<i>Mysidopsis bahia</i>) under flow-through conditions with cover letter dated 011888.	99
6574650	Bionomics,, Springborn (1986). Chronic toxicity of butylbenzyl phthalate to mysid shrimp (<i>Mysidopsis bahia</i>) [Bionomics Report #BW-86-7-2074].	102
	<i>Chironomus tentans</i> (Midge)	
679312	Call, D. J., Markee, T. P., Geiger, D. L., Brooke, L. T., Vandeventer, F. A., Cox, D. A., Genisot, K. I., Robillard, K. A., Gorsuch, J. W., Parkerton, T. F., Reiley, M. C., Ankley, G. T., Mount, D. R. (2001). An assessment of the toxicity of phthalate esters to freshwater benthos. 1. Aqueous exposures. Environmental Toxicology and Chemistry 20(8):1798-1804.	106
1359257	Monsanto, (1982). Acute toxicity of santicizer 160 to <i>Chironomus tentans</i> .	107
1359238	SRI International, (1984). Acute toxicity studies on S-160 using two midge species as the test organisms.	110
	<i>Daphnia magna</i> (Water Flea)	
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. Environmental Toxicology and Chemistry 14(9):1569-1574.	110
5353206	Barera, Y., Adams, W. J. (1983). Resolving some practical questions about <i>Daphnia</i> acute toxicity tests. :509-518.	110
5353200	Bionomics,, EG&G (1979). [Sanitized] The chronic toxicity of Santicizer 160 (BN-78-1384327-1) to the water flea (<i>Daphnia magna</i>).	117
1316195	Bionomics,, Springborn (1984). Chronic toxicity of fourteen phthalate esters to <i>Daphnia magna</i> with cover letter dated 032585. :95.	121
1316223	Bionomics,, Springborn (1984). Acute toxicity of fourteen phthalate esters to <i>Daphnia magna</i> (final report).	129
789536	Jonsson, S., Baun, A. (2003). Toxicity of mono- and diesters of o-phthalic esters to a crustacean, a green alga, and a bacterium. Environmental Toxicology and Chemistry 22(12):3037-3043.	130
1359249	Monsanto, (1983). Santicizer 160 (S-160) natural water die-away toxicity test with <i>Daphnia magna</i> .	130
1359268	Monsanto, (1983). Chronic toxicity of santicizer 160 to <i>daphnia magna</i> : 21-day chronic renewal study.	134
2140006	Monsanto, (1986). [Sanitized] A measure of the acute toxicity of butyl benzyl phthalate metabolites to <i>Daphnia magna</i> .	141
680120	Rhodes, J. E., Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). Chronic toxicity of 14 phthalate esters to <i>Daphnia magna</i> and rainbow trout (<i>Oncorhynchus mykiss</i>). Environmental Toxicology and Chemistry 14(11):1967-1976.	142
	<i>Farfantepenaeus duorarum</i> (Northern Pink Shrimp)	

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1359218	Bionomics,, Springborn (1986). Acute toxicity of butylbenzyl phthalate to pink shrimp (<i>Penaeus duorarum</i>) under flow-through conditions.	143
	<i>Hexagenia sp.</i> (Mayfly)	
1359195	Analytical Bio-Chemistry Labs, (1986). Flow-through Acute Toxicity Study of Benzyl Butyl Phthalate to the Mayfly, <i>Hexagenia Sp.</i> with Attached Protocol and Cover Letter dated 092586.	144
	<i>Hyalella azteca</i> (Scud)	
679312	Call, D. J., Markee, T. P., Geiger, D. L., Brooke, L. T., Vandeventer, F. A., Cox, D. A., Genisot, K. I., Robillard, K. A., Gorsuch, J. W., Parkerton, T. F., Reiley, M. C., Ankley, G. T., Mount, D. R. (2001). An assessment of the toxicity of phthalate esters to freshwater benthos. 1. Aqueous exposures. <i>Environmental Toxicology and Chemistry</i> 20(8):1798-1804.	145
6574639	Chemical Manufacturers Association, (1996). Letter from Monsanto submitting butyl benzene phthalate LC50 results.	146
7325945	Lake Superior Research Institute, (1997). Sediment toxicity testing program for phthalate esters.	146
	<i>Macrobrachium rosenbergii</i> (Giant River Prawn)	
789598	Sung, H. H., Kao, W. Y., Su, Y. J. (2003). Effects and toxicity of phthalate esters to hemocytes of giant freshwater prawn, <i>Macrobrachium rosenbergii</i> . <i>Aquatic Toxicology</i> 64(1):25-37.	147
	<i>Moina macrocopa</i> (Water Flea)	
788149	Wang, J. X., Xi, Y. L., Hu, K., Liu, X. B. (2011). Effect of butyl benzyl phthalate on life table-demography of two successive generations of cladoceran <i>Moina macrocopa</i> Straus. <i>Journal of Environmental Biology</i> 32(1):17-22.	149
	<i>Paratanytarsus dissimilis</i> (Midge)	
1359238	SRI International, (1984). Acute toxicity studies on S-160 using two midge species as the test organisms.	154
	<i>Paratanytarsus parthenogeneticus</i> (Midge)	
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. <i>Environmental Toxicology and Chemistry</i> 14(9):1569-1574.	156
1359274	Monsanto, (1983). Acute toxicity of santicizer 160 to the midge <i>paratanytarsus parthenogenetica</i> with cover letter.	157
	<i>Procambarus sp.</i> (Crayfish)	
5497664	Analytical Bio-Chemistry Labs, (1986). Flow-through acute toxicity report - 96 hr flow-through toxicity study of benzyl butyl phthalate to the freshwater crayfish, <i>procambarus sp</i> (final report) w-attach and letter 072888.	157
Habitat: Aquatic Taxa: Worms		
	<i>Lumbriculus variegatus</i> (Oligochaete, Worm)	
679312	Call, D. J., Markee, T. P., Geiger, D. L., Brooke, L. T., Vandeventer, F. A., Cox, D. A., Genisot, K. I., Robillard, K. A., Gorsuch, J. W., Parkerton, T. F., Reiley, M. C., Ankley, G. T., Mount, D. R. (2001). An assessment of the toxicity of phthalate esters to freshwater benthos. 1. Aqueous exposures. <i>Environmental Toxicology and Chemistry</i> 20(8):1798-1804.	159
7325945	Lake Superior Research Institute, (1997). Sediment toxicity testing program for phthalate esters.	159
	<i>Nereis virens</i> (Polychaete Worm)	
6574648	Bionomics,, Springborn (1986). Acute toxicity of butylbenzyl phthalate to polychaetes (<i>Nereis/Neanthes virens</i>) under flow-through conditions [Bionomics Report #BW-86-7-2094].	160
Habitat: Aquatic Taxa: Mollusks		
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6574644	Bionomics,, Springborn (1986). Acute toxicity of 14C-butyl benzyl phthalate to eastern oysters (<i>Crassostrea virginica</i>).	161
6574651	Bionomics,, Springborn (1986). Uptake and elimination of 14C-residue by eastern oysters (<i>Crassostrea virginica</i>) exposed to butylbenzyl phthalate (BBP) [Bionomics Report #BW-86-2114].	161
5923210	Zaroogian, G. E. (1981). Interlaboratory comparison - acute toxicity tests using the 48 hour oyster embryo-larval assay.	164
<i>Haliothis diversicolor</i> ssp. <i>supertexta</i> (Taiwan Abalone)		
697762	Liu, Y., Guan, Y., Yang, Z., Cai, Z., Mizuno, T., Tsuno, H., Zhu, W., Zhang, X. (2009). Toxicity of seven phthalate esters to embryonic development of the abalone <i>Haliothis diversicolor</i> supertexta. <i>Ecotoxicology</i> 18(3):293-303.	165
Habitat: Aquatic Taxa: Non-vascular plants		
<i>Chlorella vulgaris</i> (Green Algae)		
10617118	Ecotox,, Carolina (1997). Effect of butyl benzyl phthalate (Santicizer 160) on the growth and reproduction of <i>Chlorella vulgaris</i> .	167
<i>Desmodesmus subspicatus</i> (Green Algae)		
10617116	Ecotox,, Carolina (1995). The toxicity of butyl benzyl phthalate (Santicizer 160) to <i>Scenedesmus subspicatus</i> .	169
<i>Fistulifera pelliculosa</i> (Diatom)		
10617117	Ecotox,, Carolina (1995). [Redacted] The toxicity of butyl benzyl phthalate (Santicizer 160) to <i>Navicula pelliculosa</i> .	173
<i>Karenia brevis</i> (Dinoflagellate)		
3230225	Liu, N., Wen, F., Li, F., Zheng, X., Liang, Z., Zheng, H. (2016). Inhibitory mechanism of phthalate esters on <i>Karenia brevis</i> . <i>Chemosphere</i> 155:498-508.	177
<i>Raphidocelis subcapitata</i> (Green Algae)		
789536	Jonsson, S., Baun, A. (2003). Toxicity of mono- and diesters of o-phthalic esters to a crustacean, a green alga, and a bacterium. <i>Environmental Toxicology and Chemistry</i> 22(12):3037-3043.	179
<i>Selenastrum capricornutum</i> (Green Algae)		
1321996	Adams, W. J., Biddinger, G. R., Robillard, K. A., Gorsuch, J. W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms. <i>Environmental Toxicology and Chemistry</i> 14(9):1569-1574.	179
1316196	Bionomics,, Springborn (1984). FYI Submission: Toxicity of fourteen phthalate esters to the freshwater green alga <i>Selenastrum capricornutum</i> .	180
1359173	Monsanto, (1985). Initial submission: Acute toxicity of S-160 to the freshwater green alga, <i>Selenastrum capricornutum</i> with cover letter dated 081492.	180
1359180	Monsanto, (1980). Initial submission: 14-day algal bottle assay (<i>Selenastrum capricornutum</i>) with cover letter dated 08/14/92.	181
Habitat: Aquatic Taxa: Other Invertebrates		
<i>Brachionus calyciflorus</i> (Rotifer)		
3070931	Cruciani, V., Iovine, C., Thomé, J. P., Joaquim-Justo, C. (2015). Impact of three phthalate esters on the sexual reproduction of the Monogonont rotifer, <i>Brachionus calyciflorus</i> . <i>Ecotoxicology</i> 25(1):192-200.	183
1336226	Zhao, L. L., Xi, Y. L., Huang, L., Zha, C. W. (2009). Effects of three phthalate esters on the life-table demography of freshwater rotifer <i>Brachionus calyciflorus</i> Pallas. <i>Aquatic Ecology</i> 43(2):395-402.	186
<i>Hydra littoralis</i> (Hydra)		

1359223	Analytical Bio-Chemistry Labs, (1986). Final report of the flow-through acute toxicity of butyl benzyl phthalate to hydra littoralis.	188
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	<i>Xenopus laevis</i> (African Clawed Frog)	
10063055	Battelle, (2018). 21-d Amphibian Metamorphosis Assay (AMA) of benzyl butyl phthalate with African clawed frog, <i>Xenopus laevis</i> .	191
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	<i>Brassica rapa</i> (Bird Rape)	
675180	Gorsuch, J. W., Staples, C. A., Brown, D., Enste-Diefenbach, R. (2008). Vapor-phase toxicity of butylbenzyl phthalate to three plant species: white mustard, chinese cabbage, and white clover. <i>Bulletin of Environmental Contamination and Toxicology</i> 81(2):220-224.	206
	<i>Ipomoea aquatica</i> (Swamp Morningglory)	
807145	Chen, W. C., Huang, H. C., Wang, Y. S., Yen, J. H. (2011). Effect of benzyl butyl phthalate on physiology and proteome characterization of water celery (<i>Ipomoea aquatica</i> Forsk.). <i>Ecotoxicology and Environmental Safety</i> 74(5):1325-1330.	206
	<i>Sinapis alba</i> (White Mustard)	
675180	Gorsuch, J. W., Staples, C. A., Brown, D., Enste-Diefenbach, R. (2008). Vapor-phase toxicity of butylbenzyl phthalate to three plant species: white mustard, chinese cabbage, and white clover. <i>Bulletin of Environmental Contamination and Toxicology</i> 81(2):220-224.	207
	<i>Trifolium repens</i> (Dutch Clover)	
675180	Gorsuch, J. W., Staples, C. A., Brown, D., Enste-Diefenbach, R. (2008). Vapor-phase toxicity of butylbenzyl phthalate to three plant species: white mustard, chinese cabbage, and white clover. <i>Bulletin of Environmental Contamination and Toxicology</i> 81(2):220-224.	207
Habitat: Terrestrial Taxa: Mammalian		
	<i>Rattus norvegicus</i> (Norway Rat)	
689975	Hotchkiss, A. K., Parks-Saldutti, L. G., Ostby, J. S., Lambright, C., Furr, J., Vandenberg, J. G., Gray, L. E., Jr (2004). A mixture of the "antiandrogens" linuron and butyl benzyl phthalate alters sexual differentiation of the male rat in a cumulative fashion. <i>Biology of Reproduction</i> 71(6):1852-1861.	208
Habitat: Terrestrial Taxa: Worms		
	<i>Caenorhabditis elegans</i> (Nematode)	
1249864	Kwon, H. C., Roh, J. Y., Lim, D., Choi, J., Kwon, J. H. (2011). Maintaining the constant exposure condition for an acute caenorhabditis elegans mortality test using passive dosing. <i>Environmental Health and Toxicology</i> 26:e2011015.	218
5043459	Shin, N., Cuenca, L., Karthikraj, R., Kannan, K., Colaiacovo, M. P. (2019). Assessing effects of germline exposure to environmental toxicants by high-throughput screening in <i>C. elegans</i> . <i>PLoS Genetics</i> 15(2):e1007975.	219
Habitat: Terrestrial Taxa: Avian		
	<i>Gallus gallus</i> (Chicken)	
1359174	University of Arizona, (1978). Initial submission: Evaluation of butyl benzyl phthalate with laying hens with cover letter dated 080792.	220
Habitat: Terrestrial Taxa: Arthropods		
	<i>Lasius niger</i> (Black Garden Ant)	
2345940	Cuvillier-Hot, V., Salin, K., Devers, S., Tasiemski, A., Schaffner, P., Boulay, R., Billiard, S., Lenoir, A. (2014). Impact of ecological doses of the most widespread phthalate on a terrestrial species, the ant <i>Lasius niger</i> . <i>Environmental Research</i> 131:104-110.	221

2347468	Lenoir, A., Touchard, A., Devers, S., Christidès, J. P., Boulay, R., Cuvillier-Hot, V. (2014). Ant cuticular response to phthalate pollution. Environmental Science and Pollution Research 21(23):13446-13451.	221
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Data Extraction of Rodent Data for the Application of Environmental Hazard

1359183	TNO (CIVO) (1993). Dietary one-generation reproduction study with butyl benzyl phthalate in rats with cover letter dated 040793.	223
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Human Health Hazard Animal Toxicology

Butyl benzyl phthalate

Short-term (>1-30 days)

2219796	Ahmad, R., Gautam, A. K., Verma, Y., Sedha, S., Kumar, S. (2014). Effects of in utero di-butyl phthalate and butyl benzyl phthalate exposure on offspring development and male reproduction of rat. Environmental Science and Pollution Research 21(4):3156-3165.	224
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1325511	BIBRA, (1986). Rat liver and lipid effects of representative phthalate esters with EPA acknowledgement letter.	225
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697382	Kwack, S., Kim, K., Kim, H., Lee, B. (2009). Comparative toxicological evaluation of phthalate diesters and metabolites in Sprague-Dawley male rats for risk assessment. Journal of Toxicology and Environmental Health, Part A: Current Issues 72(21-22):1446-1454.	228
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673292	Lee, B. M., Koo, H. J. (2007). Hershberger assay for antiandrogenic effects of phthalates. Journal of Toxicology and Environmental Health, Part A: Current Issues 70(15-16):1365-1370.	233
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Reproductive/Developmental

674931	Aso, S., Ehara, H., Miyata, K., Hosuyama, S., Shiraishi, K., Umano, T., Minobe, Y. (2005). A two-generation reproductive toxicity study of butyl benzyl phthalate in rats. Journal of Toxicological Sciences 30(Special Issue):S39-S58.	242
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2510906	Furr, J. R., Lambright, C. S., Wilson, V. S., Foster, P. M., Gray, L. E., Jr (2014). A short-term in vivo screen using fetal testosterone production, a key event in the phthalate adverse outcome pathway, to predict disruption of sexual differentiation. Toxicological Sciences 140(2):403-424.	243
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9419406	Gray, L. E., Jr, Lambright, C. S., Conley, J. M., Evans, N., Furr, J. R., Hannas, B. R., Wilson, V. S., Sampson, H., Foster, P. M. D. (2021). Genomic and Hormonal Biomarkers of Phthalate-Induced Male Rat Reproductive Developmental Toxicity Part II: A Targeted RT-qPCR Array Approach That Defines a Unique Adverse Outcome Pathway. Toxicological Sciences 182(2):195-214.	243
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675335	Nagao, T., Ohta, R., Marumo, H., Shindo, T., Yoshimura, S., Ono, H. (2000). Effect of butyl benzyl phthalate in Sprague-Dawley rats after gavage administration: A two-generation reproductive study. Reproductive Toxicology 14(6):513-532.	244
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1359183	TNO (CIVO), (1993). Dietary one-generation reproduction study with butyl benzyl phthalate in rats with cover letter dated 040793.	245
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675462	Tyl, R. W., Myers, C. B., Marr, M. C., Fail, P. A., Seely, J. C., Brine, D. R., Barter, R. A., Butala, J. H. (2004). Reproductive toxicity evaluation of dietary butyl benzyl phthalate (BBP) in rats. Reproductive Toxicology 18(2):241-264.	246
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Human Health Hazard Epidemiology

Butyl benzyl phthalate

7502437	Wang, C. W., Chen, S. C., Wu, D. W., Chen, H. C., Lin, H. H., Su, H., Shiea, J. T., Lin, W. Y., Hung, C. H., Kuo, C. H. (2021). Effect of dermal phthalate levels on lung function tests in residential area near a petrochemical complex. Environmental Science and Pollution Research 28(21):27333-27344.	251
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Metabolite: Mono-benzyl phthalate (MBzP)

4829277	Amin, M. M., Ebrahimpour, K., Parastar, S., Shoshtari-Yeganeh, B., Hashemi, M., Mansourian, M., Poursafa, P., Fallah, Z., Rafiei, N., Kelishadi, R. (2018). Association of urinary concentrations of phthalate metabolites with cardiometabolic risk factors and obesity in children and adolescents. Chemosphere 211:547-556.	252
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4728682	Amin, M. M., Parastar, S., Ebrahimpour, K., Shoshtari-Yeganeh, B., Hashemi, M., Mansourian, M., Kelishadi, R. (2018). Association of urinary phthalate metabolites concentrations with body mass index and waist circumference. <i>Environmental Science and Pollution Research</i> 25(11):11143-11151.	253
4829228	Arbuckle, T. E., Agarwal, A., Macpherson, S. H., Fraser, W. D., Sathyarayana, S., Ramsay, T., Dodds, L., Muckle, G., Fisher, M., Foster, W., Walker, M., Monnier, P. (2018). Prenatal exposure to phthalates and phenols and infant endocrine-sensitive outcomes: The MIREC study. <i>Environment International</i> 120:572-583.	254
5039985	Balalian, A. A., Whyatt, R. M., Liu, X., Insel, B. J., Rauh, V. A., Herbstman, J., Factor-Litvak, P. (2019). Prenatal and childhood exposure to phthalates and motor skills at age 11 years. <i>Environmental Research</i> 171:416-427.	255
4829221	Berger, K., Eskenazi, B., Kogut, K., Parra, K., Lustig, R. H., Greenspan, L. C., Holland, N., Calafat, A. M., Ye, X., Harley, K. G. (2018). Association of Prenatal Urinary Concentrations of Phthalates and Bisphenol A and Pubertal Timing in Boys and Girls. <i>Environmental Health Perspectives</i> 126(9):97004.	257
5494469	Bloom, M. S., Wenzel, A. G., Brock, J. W., Kucklick, J. R., Wineland, R. J., Cruze, L., Unal, E. R., Yucel, R. M., Jiyessova, A., Newman, R. B. (2019). Racial disparity in maternal phthalates exposure; Association with racial disparity in fetal growth and birth outcomes. <i>Environment International</i> 127:473-486.	260
5043345	Bornehag, C. G., Lindh, C., Reichenberg, A., Wikström, S., Hallerback, Unenge, M., Evans, S. F., Sathyarayana, S., Barrett, E. S., Nguyen, N., R.H., Bush, N. R., Swan, S. H. (2018). Association of prenatal phthalate exposure with language development in early childhood. <i>JAMA Pediatrics</i> 172(12):1169-1176.	261
4728664	Boss, J., Zhai, J., Aung, M. T., Ferguson, K. K., Johns, L. E., McElrath, T. F., Meeker, J. D., Mukherjee, B. (2018). Associations between mixtures of urinary phthalate metabolites with gestational age at delivery: a time to event analysis using summative phthalate risk scores. <i>Environmental Health</i> 17(1):56.	262
10294569	Burns, J. S., Sergeyev, O., Lee, M. M., Williams, P. L., Mínguez-Alarcón, L., Plaku-Alakbarova, B., Sokolov, S., Kovalev, S., Koch, H. M., Lebedev, A. T., Hauser, R., Korrick, S. A., Study, R.C. (2022). Associations of prepubertal urinary phthalate metabolite concentrations with pubertal onset among a longitudinal cohort of boys. <i>Environmental Research</i> 212(Pt A):113218.	262
5041222	Chen, J., Zhou, X., Zhang, H., Liu, Y., Cao, C., Dong, R., Yuan, Y., Wang, M., Lu, Y., Wu, M., Li, S., Chen, B. (2019). Association between urinary concentration of phthalate metabolites and impaired renal function in Shanghai adults. <i>Environmental Pollution</i> 245:149-162.	263
5043528	Chin, H. B., Jukic, A. M., Wilcox, A. J., Weinberg, C. R., Ferguson, K. K., Calafat, A. M., McConaughey, D. R., Baird, D. D. (2019). Association of urinary concentrations of phthalate metabolites and bisphenol A with early pregnancy endpoints. <i>Environmental Research</i> 168:254-260.	263
7978495	Choi, G., Keil, A. P., Villanger, G. D., Richardson, D. B., Daniels, J. L., Hoffman, K., Sakhi, A. K., Thomsen, C., Herring, A. H., Dровер, M., S.S., Nethery, R., Aase, H., Engel, S. M. (2021). Pregnancy exposure to common-detect organophosphate esters and phthalates and maternal thyroid function. <i>Science of the Total Environment</i> 782:146709.	264
8010273	Choi, G., Villanger, G. D., Dровер, M., S.S., Sakhi, A. K., Thomsen, C., Nethery, R. C., Zeiner, P., Knudsen, G. P., Reichborn-Kjennerud, T., Øvergaard, K. R., Herring, A. H., Skogan, A. H., Biele, G., Aase, H., Engel, S. M. (2021). Prenatal phthalate exposures and executive function in preschool children. <i>Environment International</i> 149:106403.	266
4728651	Dales, R. E., Kauri, L. M., Cakmak, S. (2018). The associations between phthalate exposure and insulin resistance, β -cell function and blood glucose control in a population-based sample. <i>Science of the Total Environment</i> 612:1287-1292.	267
8204339	Daniel, S., Balalian, A. A., Insel, B. J., Liu, X., Whyatt, R. M., Calafat, A. M., Rauh, V. A., Perera, F. P., Hoepner, L. A., Herbstman, J., Factor-Litvak, P. (2020). Prenatal and early childhood exposure to phthalates and childhood behavior at age 7 years. <i>Environment International</i> 143:105894.	268
6957610	Daniel, S., Balalian, A. A., Whyatt, R. M., Liu, X., Rauh, V., Herbstman, J., Factor-Litvak, P. (2020). Perinatal phthalates exposure decreases fine-motor functions in 11-year-old girls: Results from weighted Quantile sum regression. <i>Environment International</i> 136:105424.	270
5559180	Dong, R., Wu, Y., Chen, J., Wu, M., Li, S., Chen, B. (2019). Lactational exposure to phthalates impaired the neurodevelopmental function of infants at 9months in a pilot prospective study. <i>Chemosphere</i> 226:351-359.	272

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9387317	Dries, v.d., M. A., Guxens, M., Spaan, S., Ferguson, K. K., Philips, E., Santos, S., Jaddoe, V., V.W., Ghassabian, A., Trasande, L., Tiemeier, H., Pronk, A. (2020). Phthalate and bisphenol exposure during pregnancy and offspring nonverbal IQ. <i>Environmental Health Perspectives</i> 128(7):77009.	274
5512126	Durmaz, E., Erkekoglu, P., Asci, A., Akçurin, S., Bircan, I., Kocer-Gumusel, B. (2018). Urinary phthalate metabolite concentrations in girls with premature thelarche. <i>Environmental Toxicology and Pharmacology</i> 59:172-181.	275
6717805	England-Mason, G., Martin, J. W., Macdonald, A., Kinniburgh, D., Giesbrecht, G. F., Letourneau, N., Dewey, D. (2020). Similar names, different results: Consistency of the associations between prenatal exposure to phthalates and parent-ratings of behavior problems in preschool children. <i>Environment International</i> 142:105892.	276
9354255	Evans, S. F., Raymond, S., Sethuram, S., Barrett, E. S., Bush, N. R., Nguyen, R., Sathyarayana, S., Swan, S. H. (2021). Associations between prenatal phthalate exposure and sex-typed play behavior in preschool age boys and girls. <i>Environmental Research</i> 192:110264.	287
4728501	Huang, L. L., Zhou, B., Ai, S. H., Yang, P., Chen, Y. J., Liu, C., Deng, Y. L., Lu, Q., Miao, X. P., Lu, W. Q., Wang, Y. X., Zeng, Q. (2018). Prenatal phthalate exposure, birth outcomes and DNA methylation of Alu and LINE-1 repetitive elements: A pilot study in China. <i>Chemosphere</i> 206:759-765.	291
6815846	Hyland, C., Mora, A. M., Kogut, K., Calafat, A. M., Harley, K., Deardorff, J., Holland, N., Eskenazi, B., Sagiv, S. K. (2019). Prenatal exposure to phthalates and neurodevelopment in the CHAMACOS cohort.	292
9415898	Kim, J. I., Lee, J., Lee, K. S., Lee, Y. A., Shin, C. H., Hong, Y. C., Kim, B. N., Lim, Y. H. (2021). Association of phthalate exposure with autistic traits in children. <i>Environment International</i> 157:106775.	293
5433079	Ko, N. Y., Lo, Y. C., Huang, P. C., Huang, Y. C., Chang, J. L., Huang, H. B. (2019). Changes in insulin resistance mediate the associations between phthalate exposure and metabolic syndrome. <i>Environmental Research</i> 175:434-441.	294
5933569	Ku, H. Y., Tsai, T. L., Wang, P. L., Su, P. H., Sun, C. W., Wang, C. J., Wang, S. L. (2020). Prenatal and childhood phthalate exposure and attention deficit hyperactivity disorder traits in child temperament: A 12-year follow-up birth cohort study. <i>Science of the Total Environment</i> 699(Elsevier):134053.	295
5053633	Li, N., Papandonatos, G. D., Calafat, A. M., Yolton, K., Lanphear, B. P., Chen, A., Braun, J. M. (2019). Identifying periods of susceptibility to the impact of phthalates on children's cognitive abilities. <i>Environmental Research</i> 172:604-614.	296
9419532	Li, N., Papandonatos, G. D., Calafat, A. M., Yolton, K., Lanphear, B. P., Chen, A., Braun, J. M. (2020). Gestational and childhood exposure to phthalates and child behavior. <i>Environment International</i> 144:106036.	297
4829246	Malits, J., Attina, T. M., Karthikraj, R., Kannan, K., Naidu, M., Furth, S., Warady, B. A., Vento, S., Trachtman, H., Trasande, L. (2018). Renal function and exposure to bisphenol A and phthalates in children with chronic kidney disease. <i>Environmental Research</i> 167:575-582.	298
5432795	Martínez-Ibarra, A., Martínez-Razo, L. D., Vázquez-Martínez, E. R., Martínez-Cruz, N., Flores-Ramírez, R., García-Gómez, E., López-López, M., Ortega-González, C., Camacho-Arroyo, I., Cerbón, M. (2019). Unhealthy Levels of Phthalates and Bisphenol A in Mexican Pregnant Women with Gestational Diabetes and Its Association to Altered Expression of miRNAs Involved with Metabolic Disease. <i>International Journal of Molecular Sciences</i> 20(13):3343.	298
7978907	Muerkötter, A. P., Frederiksen, H., Juul, A., Andersson, A. M., Jensen, R. C., Glintborg, D., Kyhl, H. B., Andersen, M. S., Timmermann, G., C.A., Jensen, T. K. (2020). Maternal phthalate exposure associated with decreased testosterone/LH ratio in male offspring during mini-puberty. <i>Odense Child Cohort</i> . <i>Environment International</i> 144:106025.	299
6718069	Oulhote, Y., Lanphear, B., Braun, J. M., Webster, G. M., Arbuckle, T. E., Etzel, T., Forget-Dubois, N., Seguin, J. R., Bouchard, M. F., Macfarlane, A., Ouellet, E., Fraser, W., Muckle, G. (2020). Gestational Exposures to Phthalates and Folic Acid, and Autistic Traits in Canadian Children. <i>Environmental Health Perspectives</i> 128(2):27004.	300
4728408	Parada, H., Gammon, M. D., Chen, J., Calafat, A. M., Neugut, A. I., Santella, R. M., Wolff, M. S., Teitelbaum, S. L. (2018). Urinary Phthalate Metabolite Concentrations and Breast Cancer Incidence and Survival following Breast Cancer: The Long Island Breast Cancer Study Project. <i>Environmental Health Perspectives</i> 126(4):47013.	301
8350115	Patti, M. A., Newschaffer, C., Eliot, M., Hamra, G. B., Chen, A., Croen, L. A., Fallin, M. D., Hertz-Pannier, I., Kalloo, G., Khouri, J. C., Lanphear, B. P., Lyall, K., Yolton, K., Braun, J. M. (2021). Gestational exposure to phthalates and social responsiveness scores in children using quantile regression: The EARLI and home studies. <i>International Journal of Environmental Research and Public Health</i> 18(3):17-Jan.	302

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5043615	Reeves, K. W., Santana, M. D., Manson, J. E., Hankinson, S. E., Zoeller, R. T., Bigelow, C., Sturgeon, S. R., Spiegelman, D., Tinker, L., Luo, J., Chen, B., Meliker, J., Bonner, M. R., Cote, M. L., Cheng, T. D., Calafat, A. M. (2019). Urinary phthalate biomarker concentrations and postmenopausal breast cancer risk. <i>Journal of the National Cancer Institute</i> 111(10):1059-1067.	302
5043451	Rodríguez-Carmona, Y., Cantoral, A., Trejo-Valdivia, B., Téllez-Rojo, M. M., Svensson, K., Peterson, K. E., Meeker, J. D., Schnaas, L., Solano, M., Watkins, D. J. (2019). Phthalate exposure during pregnancy and long-term weight gain in women. <i>Environmental Research</i> 169:26-32.	303
4728848	Romano, M. E., Eliot, M. N., Zoeller, R. T., Hoofnagle, A. N., Calafat, A. M., Karagas, M. R., Yolton, K., Chen, A., Lanphear, B. P., Braun, J. M. (2018). Maternal urinary phthalate metabolites during pregnancy and thyroid hormone concentrations in maternal and cord sera: The HOME Study. <i>International Journal of Hygiene and Environmental Health</i> 221(4):623-631.	303
5613207	Santana, Díaz, M. V., Hankinson, S. E., Bigelow, C., Sturgeon, S. R., Zoeller, R. T., Tinker, L., Manson, E., J.A., Calafat, A. M., Meliker, J. R., Reeves, K. W. (2019). Urinary concentrations of phthalate biomarkers and weight change among postmenopausal women: a prospective cohort study. <i>Environmental Health</i> 18(1):20.	304
8453074	Shen, C. Y., Weng, J., Tsai, J., Su, P., Chou, M. C., Wang, S. (2021). Prenatal exposure to endocrine-disrupting chemicals and subsequent brain structure changes revealed by voxel-based morphometry and generalized q-sampling MRI. <i>International Journal of Environmental Research and Public Health</i> 18(9):4798.	304
4829218	Shi, W., Lin, Z., Liao, C., Zhang, J., Liu, W., Wang, X., Cai, J., Zou, Z., Wang, H., Norback, D., Kan, H., Huang, C., Zhao, Z. (2018). Urinary phthalate metabolites in relation to childhood asthmatic and allergic symptoms in Shanghai. <i>Environment International</i> 121(Pt 1):276-286.	305
5114010	Shim, Y. H., Ock, J. W., Kim, Y. J., Kim, Y., Kim, S. Y., Kang, D. (2019). Association between heavy metals, bisphenol A, volatile organic compounds and phthalates and metabolic syndrome. <i>International Journal of Environmental Research and Public Health</i> 16(4):671.	306
5043457	Shin, H. M., Schmidt, R. J., Tancredi, D., Barkoski, J., Ozonoff, S., Bennett, D. H., Hertz-Pannier, I. (2018). Prenatal exposure to phthalates and autism spectrum disorder in the MARBLES study. <i>Environmental Health</i> 17(1):85.	307
9419487	Shoaff, J. R., Coull, B., Weuve, J., Bellinger, D. C., Calafat, A. M., Schantz, S. L., Korrick, S. A. (2020). Association of exposure to endocrine-disrupting chemicals during adolescence with attention-deficit/hyperactivity disorder-related behaviors. <i>JAMA Network Open</i> 3(8):e2015041.	308
4728698	Shu, H., Wikstrom, S., Jönsson, G., B.A., Lindh, C. H., Svensson, Å., Nänberg, E., Bornehag, C. G. (2018). Prenatal phthalate exposure was associated with croup in Swedish infants. <i>Acta Paediatrica</i> 107(6):1011-1019.	308
4728797	Strassle, P. D., Smit, M., L.A., Hoppin, J. A. (2018). Endotoxin enhances respiratory effects of phthalates in adults: Results from NHANES 2005-6. <i>Environmental Research</i> 162:280-286.	309
5933606	Tanner, E. M., Hallerbäck, M. U., Wikström, S., Lindh, C., Kiviranta, H., Gennings, C., Bornehag, C. G. (2020). Early prenatal exposure to suspected endocrine disruptor mixtures is associated with lower IQ at age seven. <i>Environment International</i> 134:105185.	309
9495379	Trasande, L., Liu, B., Bao, W. (2021). Phthalates and attributable mortality: A population-based longitudinal cohort study and cost analysis. <i>Environmental Pollution</i> 292:118021.	310
5041285	Vafeidi, M., Myridakis, A., Roumeliotaki, T., Margetaki, K., Chalkiadaki, G., Dermitzaki, E., Venihaki, M., Sarri, K., Vassilaki, M., Leventakou, V., Stephanou, E. G., Kogevinas, M., Chatzi, L. (2018). Association of Early Life Exposure to Phthalates With Obesity and Cardiometabolic Traits in Childhood: Sex Specific Associations. <i>Frontiers in Public Health</i> 6(NOV):327.	311
8348423	Watkins, D. J., Meeker, J. D., Tamayo-Ortiz, M., Sánchez, B. N., Schnaas, L., Peterson, K. E., Téllez-Rojo, M. M. (2021). Gestational and peripubertal phthalate exposure in relation to attention performance in childhood and adolescence. <i>Environmental Research</i> 196:110911.	312
6718530	Weng, J., Hong, C., Tasi, J., Shen, C. Y., Su, P., Wang, S. (2020). The association between prenatal endocrine-disrupting chemical exposure and altered resting-state brain fMRI in teenagers. <i>Brain Structure and Function</i> 225(5):1669-1684.	312
4728873	Yang, T. C., Peterson, K. E., Meeker, J. D., Sánchez, B. N., Zhang, Z., Cantoral, A., Solano, M., Tellez-Rojo, M. M. (2018). Exposure to Bisphenol A and phthalates metabolites in the third trimester of pregnancy and BMI trajectories. <i>Pediatric Obesity</i> 13(9):550-557.	313

9644525	Zhu, Y. D., Wu, X. Y., Yan, S. Q., Huang, K., Tong, J., Gao, H., Xie, Y., Tao, S. M., Ding, P., Zhu, P., Tao, F. B. (2020). Domain- and trimester-specific effect of prenatal phthalate exposure on preschooler cognitive development in the Ma'anshan Birth Cohort (MABC) study. <i>Environment International</i> 142:105882.	314
4829283	Zhu, Y. D., Zhu, B. B., Gao, H., Huang, K., Xu, Y. Y., Yan, S. Q., Zhou, S. S., Cai, X. X., Zhang, Q. F., Qi, J., Jin, Z. X., Sheng, J., Pan, W. J., Hao, J. H., Zhu, P., Tao, F. B. (2018). Repeated measures of prenatal phthalate exposure and maternal hemoglobin concentration trends: The Ma'anshan birth cohort (MABC) study. <i>Environmental Pollution</i> 242(Pt B):1033-1041.	314
Metabolite: monobenzyl phthalate [MBzP]		
5499417	Chang, W. H., Tsai, Y. S., Wang, J. Y., Chen, H. L., Yang, W. H., Lee, C. C. (2019). Sex hormones and oxidative stress mediated phthalate-induced effects in prostatic enlargement. <i>Environment International</i> 126:184-192.	317
Metabolite: monobenzyl phthalate (MBzP)		
5750709	Huang, H. B., Kuo, P. H., Su, P. H., Sun, C. W., Chen, W. J., Wang, S. L. (2019). Prenatal and childhood exposure to phthalate diesters and neurobehavioral development in a 15-year follow-up birth cohort study. <i>Environmental Research</i> 172:569-577.	318
7274600	Lee, G., Kim, S., Bastiaensen, M., Malarvannan, G., Poma, G., Casero, N. C., Gys, C., Covaci, A., Lee, S., Lim, J. E., Mok, S., Moon, H. B., Choi, G., Choi, K. (2020). Exposure to organophosphate esters, phthalates, and alternative plasticizers in association with uterine fibroids. <i>Environmental Research</i> 189:109874.	318
Metabolite: Mono-benzyl phthalate (MBzP); as part of molar sum of High molecular weight phthalates		
6958936	England-Mason, G., Grohs, M. N., Reynolds, J. E., Macdonald, A., Kinniburgh, D., Liu, J., Martin, J. W., Lebel, C., Dewey, D. (2020). White matter microstructure mediates the association between prenatal exposure to phthalates and behavior problems in preschool children. <i>Environmental Research</i> 182:109093.	319
Metabolite: Monobutyl phthalate (MBP); Mono-benzyl phthalate (MBzP)		
5490441	Jahreis, S., Trump, S., Bauer, M., Bauer, T., Thürmann, L., Feltens, R., Wang, Q., Gu, L., Grützmann, K., Röder, S., Averbeck, M., Weichenhan, D., Plass, C., Sack, U., Borte, M., Dubourg, V., Schüürmann, G., Simon, J. C., Von, Martin, B., Hackermüller, J., Eils, R., Lehmann, I., Polte, T. (2018). Maternal phthalate exposure promotes allergic airway inflammation over 2 generations through epigenetic modifications. <i>Journal of Allergy and Clinical Immunology</i> 141(2):741-753.	321

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (8 Day(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.002 mg/L / 0.080 mg/L / 0.155 mg/L / 0.27 mg/L / 0.48 mg/L / 0.92 mg/L	Physiology (Physiology-Cough,Pigmentation, Response Site: Not reported)	NR (0.080-0.92 mg/L)	Behavioral	High	790034
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.002 mg/L / 0.246 mg/L / 0.30 mg/L / 0.393 mg/L / 0.55 mg/L / 0.83 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	LC50 (0.51 (0.46-0.55) mg/L)	Mortality	High	790034
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.002 mg/L / 0.226 mg/L / 0.296 mg/L / 0.45 mg/L / 0.58 mg/L / 0.82 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	LC50 (0.51 (0.47-0.56) mg/L)	Mortality	High	790034
85-68-7	96 Hour(s), (8 Day(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.002 mg/L / 0.080 mg/L / 0.155 mg/L / 0.27 mg/L / 0.48 mg/L / 0.92 mg/L	Behavior (Behavior-Activity, general,Aggregation/Clumping, Response Site: Not reported)	NR (0.080-0.92 mg/L)	Behavioral	High	790034

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.0023 mg/L / 0.236 (0.226-0.246) mg/L / 0.30 (0.296-0.30) mg/L / 0.42 (0.393-0.45) mg/L / 0.57 (0.55-0.58) mg/L / 0.82 (0.82-0.83) mg/L	Biochemical (Hormone(s)-Dopamine, Response Site: Not reported)	NOEC (0.82 (0.82-0.83) mg/L)	Mechanistic: Neurotoxicology	High	790034
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.0023 mg/L / 0.236 (0.226-0.246) mg/L / 0.30 (0.296-0.30) mg/L / 0.42 (0.393-0.45) mg/L / 0.57 (0.55-0.58) mg/L / 0.82 (0.82-0.83) mg/L	Biochemical (Hormone(s)-Norepinephrine, Response Site: Not reported)	NOEC (0.82 (0.82-0.83) mg/L)	Mechanistic: Neurotoxicology	High	790034
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.0023 mg/L / 0.236 (0.226-0.246) mg/L / 0.30 (0.296-0.30) mg/L / 0.42 (0.393-0.45) mg/L / 0.57 (0.55-0.58) mg/L / 0.82 (0.82-0.83) mg/L	Biochemical (Hormone(s)-Epinephrine, Response Site: Not reported)	NR (0.236-0.82 mg/L)	Mechanistic: Neurotoxicology	High	790034
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.0023 mg/L / 0.236 (0.226-0.246) mg/L / 0.30 (0.296-0.30) mg/L / 0.42 (0.393-0.45) mg/L / 0.57 (0.55-0.58) mg/L / 0.82 (0.82-0.83) mg/L	Physiology (Physiology-Cough,Pigmentation, Response Site: Not reported)	NR (0.236-0.82 mg/L)	Behavioral	High	790034

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.0023 mg/L / 0.236 (0.226-0.246) mg/L / 0.30 (0.296-0.30) mg/L / 0.42 (0.393-0.45) mg/L / 0.57 (0.55-0.58) mg/L / 0.82 (0.82-0.83) mg/L	Behavior (Behavior-Activity, general, Aggregation/Clumping, Response Site: Not reported)	NR (0.236-0.82 mg/L)	Behavioral	High	790034
85-68-7	165 Hour(s), (8 Day(s))	<i>Cymatogaster aggregata</i> (Shiner Perch), Juvenile, Not Reported, Wild (COLLECTED FROM YAQUINA BAY, OREGON, DURING THE SUMMER OF 1981)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0.002 mg/L / 0.080 mg/L / 0.155 mg/L / 0.27 mg/L / 0.48 mg/L / 0.92 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.49 (0.45-0.56) mg/L)	Mortality	High	790034
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.68 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.68 mg/L)	Mortality	High	1321996
85-68-7	24 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.0 mg/L / 1.6 mg/L / 2.7 mg/L / 4.5 mg/L / 7.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (~7.5 mg/L)	Mortality	High	10617114

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.0 mg/L / 1.6 mg/L / 2.7 mg/L / 4.5 mg/L / 7.5 mg/L	Behavior (Behavior-Equilibrium, Response Site: Not reported)	NR (7.5 mg/L)	Behavioral	Medium	10617114
85-68-7	24-48 Hour(s), (48 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	1.0 ppm / 10 ppm	Mortality (Mortality-Mortality, Response Site: Not reported)	NR (1.0-10 ppm)	Mortality	High	10617114
85-68-7	48 Hour(s), (48 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	100 ppm / 500 ppm / 1000 ppm	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (1000 ppm)	Mortality	High	10617114
85-68-7	48 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.0 mg/L / 1.6 mg/L / 2.7 mg/L / 4.5 mg/L / 7.5 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-LETH (7.5 mg/L)	Mortality	High	10617114

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.0 mg/L / 1.6 mg/L / 2.7 mg/L / 4.5 mg/L / 7.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.2 (2.5-4.0) mg/L)	Mortality	High	10617114
85-68-7	72 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.0 mg/L / 1.6 mg/L / 2.7 mg/L / 4.5 mg/L / 7.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.0 (2.4-3.9) mg/L)	Mortality	High	10617114
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, Not Reported, Laboratory (HATCHED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.0 mg/L / 1.6 mg/L / 2.7 mg/L / 4.5 mg/L / 7.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.0 (2.4-3.9) mg/L)	Mortality	High	10617114

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, <=10 Week(s), Not Reported, Laboratory (EITHER CULTURED AT LAB OR PURCHASED FROM A PROVEN HATCHERY IN MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0001 ppm / 0.04 (0.01-0.06) ppm / 0.08 (0.02-0.10) ppm / 0.17 (0.02-0.25) ppm / 0.36 (0.01-0.44) ppm / 0.68 (0.02-0.80) ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.68 ppm)	Mortality	High	1316224
85-68-7	48 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, <=10 Week(s), Not Reported, Laboratory (EITHER CULTURED AT LAB OR PURCHASED FROM A PROVEN HATCHERY IN MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0001 ppm / 0.04 (0.01-0.06) ppm / 0.08 (0.02-0.10) ppm / 0.17 (0.02-0.25) ppm / 0.36 (0.01-0.44) ppm / 0.68 (0.02-0.80) ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.68 ppm)	Mortality	High	1316224
85-68-7	72 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, <=10 Week(s), Not Reported, Laboratory (EITHER CULTURED AT LAB OR PURCHASED FROM A PROVEN HATCHERY IN MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0001 ppm / 0.04 (0.01-0.06) ppm / 0.08 (0.02-0.10) ppm / 0.17 (0.02-0.25) ppm / 0.36 (0.01-0.44) ppm / 0.68 (0.02-0.80) ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.68 ppm)	Mortality	High	1316224

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, <=10 Week(s), Not Reported, Laboratory (EITHER CULTURED AT LAB OR PURCHASED FROM A PROVEN HATCHERY IN MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0001 ppm / 0.04 (0.01-0.06) ppm / 0.08 (0.02-0.10) ppm / 0.17 (0.02-0.25) ppm / 0.36 (0.01-0.44) ppm / 0.68 (0.02-0.80) ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.68 (0.02-0.80) ppm)	Mortality	High	1316224
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, <=10 Week(s), Not Reported, Laboratory (EITHER CULTURED AT LAB OR PURCHASED FROM A PROVEN HATCHERY IN MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0001 ppm / 0.04 (0.01-0.06) ppm / 0.08 (0.02-0.10) ppm / 0.17 (0.02-0.25) ppm / 0.36 (0.01-0.44) ppm / 0.68 (0.02-0.80) ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.68 ppm)	Mortality	High	1316224

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, 14-28 Days post-hatch, Not Reported, Laboratory (FROM EG AND G BIONOMICS RESEARCH LABORATORY OR EPA ENVIRONMENTAL RESEARCH LABORATORY, GULF BREEZE, FLORIDA)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (380 (310-430) mg/L)	Mortality	Medium	18110
85-68-7	48 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, 14-28 Days post-hatch, Not Reported, Laboratory (FROM EG AND G BIONOMICS RESEARCH LABORATORY OR EPA ENVIRONMENTAL RESEARCH LABORATORY, GULF BREEZE, FLORIDA)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (420 (380-460) mg/L)	Mortality	Medium	18110

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, 14-28 Days post-hatch, Not Reported, Laboratory (FROM EG AND G BIONOMICS RESEARCH LABORATORY OR EPA ENVIRONMENTAL RESEARCH LABORATORY, GULF BREEZE, FLORIDA)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (430 (390-470) mg/L)	Mortality	Medium	18110
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, 14-28 Days post-hatch, Not Reported, Laboratory (FROM EG AND G BIONOMICS RESEARCH LABORATORY OR EPA ENVIRONMENTAL RESEARCH LABORATORY, GULF BREEZE, FLORIDA)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (440 (410-470) mg/L)	Mortality	Medium	18110

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Cyprinodon variegatus</i> (Sheepshead Minnow), Juvenile, 14-28 Days post-hatch, Not Reported, Laboratory (FROM EG AND G BIONOMICS RESEARCH LABORATORY OR EPA ENVIRONMENTAL RESEARCH LABORATORY, GULF BREEZE, FLORIDA)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (360 mg/L)	Mortality	Medium	18110
85-68-7	0-4 Day(s), (4 Day(s))	<i>Danio rerio</i> (Zebra Danio), Not reported, Not Reported, Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Behavior (Behavior- Behavioral changes, general, Response Site: Not reported)	NR (0.001-3.0 mg/L)	Behavioral	Medium	10064182
85-68-7	0-4 Day(s), (4 Day(s))	<i>Danio rerio</i> (Zebra Danio), Not reported, Not Reported, Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Mortality (Mortality- Survival, Response Site: Not reported)	NR (0.001-3.0 mg/L)	Mortality	Medium	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Histology- Degeneration,Histological changes, general,Granuloma,Infiltration,Vacuolization, Response Site: Liver,Testes,Thyroid)	NR (8.88-137 ug/L)	Hepatic/Liver	High	10064182

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Histology-Degeneration,Histological changes, general,Granuloma,Infiltration,Vacuolization, Response Site: Liver,Testes,Thyroid)	NR (8.88-137 ug/L)	Endocrine	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Growth- Length, Response Site: Whole organism)	NR (8.88-137 ug/L)	Development/Growth	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Histology- Atresia,Debris,Histological changes, general,Granuloma,Infiltration,Vacuolization, Response Site: Liver,Ovaries,Thyroid)	NR (8.88-137 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Morphology- Weight, Response Site: Gonad(s))	NOEC (137 ug/L)	Reproductive/Teratogenic	High	10064182

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Histology-Atresia,Debris,Histological changes, general,Granuloma,Infiltration,Vacuolization, Response Site: Liver,Ovaries,Thyroid)	NR (8.88-137 ug/L)	Hepatic/Liver	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Gonad(s))	NOEC (137 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Gonad(s))	NR (8.88-137 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Reproduction (Reproduction-Spermatogonia, Response Site: Gonad(s))	NR (137 ug/L)	Reproductive/Teratogenic	High	10064182

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Histology-Degeneration,Histological changes, general,Granuloma,Infiltration,Vacuolization, Response Site: Liver,Testes,Thyroid)	NR (8.88-137 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Histology-Atresia,Debris,Histological changes, general,Granuloma,Infiltration,Vacuolization, Response Site: Liver,Ovaries,Thyroid)	NR (8.88-137 ug/L)	Endocrine	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	NOEC (20.0 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Reproduction (Reproduction-Atretic follicle stage, Response Site: Ovaries)	NR (137 ug/L)	Reproductive/Teratogenic	High	10064182

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both, Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 10 Organism	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (137 ug/L)	Mortality	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Morphology- Stage, Response Site: Testes)	NR (137 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Morphology- Stage, Response Site: Ovaries)	NR (137 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Reproduction (Reproduction- Fertilization, Response Site: Egg)	NOEC (8.88 ug/L)	Reproductive/Teratogenic	High	10064182

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NOEC (20.0 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	NOEC (20.0 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (137 ug/L)	Development/Growth	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Growth-Length, Response Site: Whole organism)	NOEC (137 ug/L)	Development/Growth	High	10064182

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Genetics-Vitellogenin mRNA, Response Site: Liver)	NOEC (137 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	LOEC (53.4 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	LOEC (53.4 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	LOEC (53.4 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064182

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Reproduction (Reproduction-Fertilization, Response Site: Egg)	LOEC (20.0 ug/L)	Reproductive/Teratogenic	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Cellular (Genetics-Vitellogenin mRNA, Response Site: Liver)	NOEC (137 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (137 ug/L)	Development/Growth	High	10064182
85-68-7	21 Day(s), (21 Day(s))	<i>Danio rerio</i> (Zebra Danio), Sexually mature, 105 Days post fertilization, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 8.88 ug/L / 20.0 ug/L / 53.4 ug/L / 137 ug/L	Growth (Morphology-Weight, Response Site: Gonad(s))	NR (8.88-137 ug/L)	Reproductive/Teratogenic	High	10064182

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (72 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4-128 Cell stage, Not Reported, Laboratory (PURCHASED FROM THE ZEBRAFISH INTERNATIONAL RESOURCE CENTER (ZIRC) AT THE UNIVERSITY OF OREGON, EU-GENE, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.01 ppm / 0.06 ppm / 0.30 ppm / 0.60 ppm / 1.50 ppm / 10.00 ppm / 50.00 ppm / 100.00 ppm / 500.00 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.72 ppm)	Mortality	Medium	2298079
85-68-7	72 Hour(s), (72 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4-128 Cell stage, Not Reported, Laboratory (PURCHASED FROM THE ZEBRAFISH INTERNATIONAL RESOURCE CENTER (ZIRC) AT THE UNIVERSITY OF OREGON, EU-GENE, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.01 ppm / 0.06 ppm / 0.30 ppm / 0.60 ppm / 1.50 ppm / 10.00 ppm / 50.00 ppm / 100.00 ppm / 500.00 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.72 ppm)	Mortality	Medium	2298079
85-68-7	72 Hour(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Physiology (Physiology- Heart rate, Response Site: Not reported)	LOEC (0.01 mg/L)	Cardiovascular	Low	5932877

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Physiology (Physiology-Heart rate, Response Site: Not reported)	NOEC (0.005 mg/L)	Cardiovascular	Low	5932877
85-68-7	7 Day(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Behavior (Behavior-Movements, number of, Response Site: Not reported)	NOEC (0.05 mg/L)	Behavioral	Low	5932877
85-68-7	7 Day(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Cellular (Genetics-Glypican 4 mRNA,RUNX family transcription factor 2b mRNA,Sonic hedgehog a mRNA,Sp7 transcription factor mRNA, Response Site: Not reported)	NR (0.001-0.2 mg/L)	Mechanistic: Cell signaling/function	Uninformative	5932877
85-68-7	7 Day(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Growth (Development-Deformation, Response Site: Not reported)	LOEC (0.005 mg/L)	Development/Growth	Uninformative	5932877
85-68-7	7 Day(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Behavior (Behavior-Movements, number of, Response Site: Not reported)	LOEC (0.1 mg/L)	Behavioral	Low	5932877

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	7 Day(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR (0.001-0.2 mg/L)	Mortality	Low	5932877
85-68-7	7 Day(s), (7 Day(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Aquatic - not reported, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.005 mg/L / 0.01 mg/L / 0.05 mg/L / 0.1 mg/L / 0.2 mg/L	Growth (Development- Deformation, Response Site: Not reported)	NOEC (0.001 mg/L)	Development/Growth	Uninformative	5932877
85-68-7	18 Hour(s), (18 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 10 uM / 20 uM / 30 uM	Growth (Morphology- Normal, Response Site: Forebrain,Hindbrain,Lens,Midbrain,Otic vesicle,Retina)	NR (10-30 uM)	Development/Growth	Medium	4728379
85-68-7	18 Hour(s), (18 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 10 uM / 20 uM / 30 uM	Growth (Morphology- Angiogenesis, Response Site: Somite,Tail)	NR (10-30 uM)	Development/Growth	Medium	4728379
85-68-7	18 Hour(s), (18 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 10 uM / 20 uM / 30 uM	Growth (Development- Deformation, Response Site: Not reported)	NR (10-30 uM)	Development/Growth	Medium	4728379
85-68-7	18 Hour(s), (18 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 10 uM / 20 uM / 30 uM	Cellular (Histology- Histological changes, general, Response Site: Somite)	NR (20-30 uM)	Mechanistic: Cell signaling/function; Cytotoxicity; Cardiovascular; Musculoskeletal	Medium	4728379
85-68-7	18 Hour(s), (18 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 10 uM / 20 uM / 30 uM	Cellular (Histology- Necrosis, Response Site: Cell)	NR (10-30 uM)	Mechanistic: Cell signaling/function; Cytotoxicity; Cardiovascular; Musculoskeletal	Medium	4728379

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	18 Hour(s), (18 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 10 uM / 20 uM / 30 uM	Cellular (Histology-Disorganization, Response Site: Somite)	NR (20-30 uM)	Mechanistic: Cell signaling/function; Cytotoxicity; Cardiovascular; Musculoskeletal	Medium	4728379
85-68-7	20 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Cellular (Genetics-Homeobox protein Nkx-2.5 mRNA, Response Site: Not reported)	LOEC (1.2 mg/L)	Mechanistic: Cell signaling/function; Cardiovascular	Medium	5490285
85-68-7	20 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Cellular (Genetics-T-box 5a mRNA, Response Site: Not reported)	NOEC (0.6 mg/L)	Mechanistic: Cell signaling/function; Cardiovascular	Medium	5490285
85-68-7	20 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Cellular (Genetics-Homeobox protein Nkx-2.5 mRNA, Response Site: Not reported)	NOEC (0.6 mg/L)	Mechanistic: Cell signaling/function; Cardiovascular	Medium	5490285
85-68-7	20 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.2 mg/L)	Mortality	Medium	5490285
85-68-7	20 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Cellular (Genetics-T-box 5a mRNA, Response Site: Not reported)	LOEC (1.2 mg/L)	Mechanistic: Cell signaling/function; Cardiovascular	Medium	5490285
85-68-7	44 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (1.2 mg/L)	Mortality	Medium	5490285

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	44 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.6 mg/L)	Mortality	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Hatch, Response Site: Not reported)	NOEC (0.6 mg/L)	Mortality	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Growth (Morphology-Length, Response Site: Heart)	NOEC (0.1 mg/L)	Development/Growth	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Cellular (Genetics-Homeobox protein Nkx-2.5 mRNA, Response Site: Not reported)	LOEC (0.1 mg/L)	Mechanistic: Cell signaling/function; Cardiovascular	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Cellular (Genetics-T-box 5a mRNA, Response Site: Not reported)	LOEC (0.1 mg/L)	Mechanistic: Cell signaling/function; Cardiovascular	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Growth (Morphology-Abnormal, Response Site: Heart)	LOEC (0.6 mg/L)	Development/Growth	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Physiology (Physiology-Heart rate, Response Site: Heart)	LOEC (0.6 mg/L)	Development/Growth	Medium	5490285

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.6 mg/L)	Mortality	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Growth (Morphology-Abnormal, Response Site: Not reported)	LOEC (0.6 mg/L)	Development/Growth	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Growth (Morphology-Length, Response Site: Heart)	LOEC (0.6 mg/L)	Development/Growth	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Hatch, Response Site: Not reported)	LOEC (1.2 mg/L)	Mortality	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Growth (Morphology-Abnormal, Response Site: Not reported)	NOEC (0.1 mg/L)	Development/Growth	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Growth (Morphology-Abnormal, Response Site: Heart)	NOEC (0.1 mg/L)	Development/Growth	Medium	5490285
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (1.2 mg/L)	Mortality	Medium	5490285

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	68 Hour(s), (68 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 4 Hours post fertilization, Not Reported, Laboratory	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L / 0.6 mg/L / 1.2 mg/L	Physiology (Physiology-Heart rate, Response Site: Heart)	NOEC (0.1 mg/L)	Development/Growth	Medium	5490285
85-68-7	18 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Physiology (Intoxication-Immobile, Response Site: Not reported)	BMD10 (10000 uM)	Immobilization	Uninformative	8635978
85-68-7	18 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Mortality (Mortality-Mortality, Response Site: Not reported)	BMD10 (62.3842485582034 uM)	Mortality	Uninformative	8635978

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	18 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Notochord)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	18 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Development-Slowed, Retarded, Delayed or Non-development, Response Site: Not reported)	BMD10 (106.152586422622 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Notochord)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Swim bladder)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Cellular (Histology-Edema, Response Site: Yolk sac)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Behavior (Behavior-Escape response, Response Site: Not reported)	BMD10 (10000 uM)	Behavioral	Uninformative	8635978

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Physiology (Injury-Curvature, Response Site: Not reported)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Physiology (Physiology-Blood flow, Response Site: Not reported)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Behavior (Behavior-Phototactic response, Response Site: Not reported)	BMD10 (51.7680407620235 uM)	Behavioral	Uninformative	8635978

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Eye)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Mortality (Mortality- Mortality, Response Site: Not reported)	BMD10 (10000 uM)	Mortality	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Mouth)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Behavior (Behavior-Phototactic response, Response Site: Not reported)	BMD10 (55.0206501203051 uM)	Behavioral	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Trunk)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Development-Color, Response Site: Not reported)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978

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85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Fin)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Fin)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Somite)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Brain)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Heart)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Otic vesicle)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (LAB STOCK FROM OREGON STATE UNIVERSITY SINNHUBER AQUATIC RESEARCH LABORATORY, CORVALLIS, OREGON)	Culture, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Jaw)	BMD10 (10000 uM)	Development/Growth	Uninformative	8635978
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Jaw)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aqueous habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Ear)	NOEC (64 uM)	Development/Growth	Uninformative	8591199

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Brain)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Somite)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Fin)	NOEC (64 uM)	Development/Growth	Uninformative	8591199

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Notochord,Tail)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Behavior (Behavior-Escape response, Response Site: Not reported)	NOEC (64 uM)	Behavioral	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Whole organism)	NOEC (64 uM)	Development/Growth	Uninformative	8591199

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Growth-Stunting, Response Site: Whole organism)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Nose)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Cellular (Histology-Edema, Response Site: Yolk sac)	NOEC (64 uM)	Development/Growth	Uninformative	8591199

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Physiology (Physiology-Pigmentation, Response Site: Not reported)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Cellular (Histology-Edema, Response Site: Pericardium)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Physiology (Physiology-Blood flow, Response Site: Not reported)	NOEC (64 uM)	Development/Growth	Uninformative	8591199

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Swim bladder)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Mortality (Mortality-Mortality, Response Site: Not reported)	NR (0.0064-64 uM)	Mortality	Uninformative	8591199
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Fin)	NOEC (64 uM)	Development/Growth	Uninformative	8591199

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	114 Hour(s), (114 Hour(s))	<i>Danio rerio</i> (Zebra Danio), Embryo, 6 Hours post fertilization, Not Reported, Laboratory (SINNHUBER AQUATIC RESEARCH LABORATORY, OREGON STATE UNIVERSITY, CORVALLIS, OR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 uM / 0.0064 uM / 0.064 uM / 0.64 uM / 6.4 uM / 64 uM	Growth (Morphology-Abnormal, Response Site: Eye)	NOEC (64 uM)	Development/Growth	Uninformative	8591199
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR (0.1 mg/L)	Mortality	Medium	1935997
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (0.1 mg/L)	Development/Growth	Medium	1935997
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, 53 Organism	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Behavior (Behavior-Social activity, Response Site: Not reported)	LOEC (0.1 mg/L)	Behavioral	Medium	1935997

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, 20 Organism	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Behavior (Behavior-Aggression, Response Site: Not reported)	LOEC (0.1 mg/L)	Behavioral	Medium	1935997
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Growth (Growth-Length, Response Site: Whole organism)	NOEC (0.1 mg/L)	Development/Growth	Medium	1935997
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Population (Population-Sex ratio, Response Site: Not reported)	NOEC (0.1 mg/L)	Reproductive/Teratogenic	Medium	1935997
85-68-7	4 Week(s), (4 Week(s))	<i>Fundulus heteroclitus</i> (Mummichog), Not reported, Both, Wild (COLLECTED FROM MIL-FORD POINT ESTUARY, LONG ISLAND SOUND)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.1 mg/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Not reported)	LOEC (0.1 mg/L)	Development/Growth	Medium	1935997

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	26 Day(s), (26 Day(s))	<i>Gasterosteus aculeatus</i> (Three-spine Stickleback), Not reported, Both, Wild (COLLECTED FROM KIND-SETHTJONNA LAKE, SOR-TRONDELAG COUNTY, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L	Behavior (Behavior- Aggregation/Clumping, Response Site: Not reported)	LOEC (0.1 mg/L)	Behavioral	Medium	789690
85-68-7	26 Day(s), (26 Day(s))	<i>Gasterosteus aculeatus</i> (Three-spine Stickleback), Not reported, Both, Wild (COLLECTED FROM KIND-SETHTJONNA LAKE, SOR-TRONDELAG COUNTY, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L	Accumulation (Accumulation- Residue, Re- sponse Site: Whole organ- ism)	NR (0.1 mg/L)	ADME (biotrans- formation)	Medium	789690
85-68-7	26 Day(s), (26 Day(s))	<i>Gasterosteus aculeatus</i> (Three-spine Stickleback), Not reported, Both, Wild (COLLECTED FROM KIND-SETHTJONNA LAKE, SOR-TRONDELAG COUNTY, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 mg/L / 0.1 mg/L	Behavior (Behavior- Aggregation/Clumping, Response Site: Not reported)	NOEC (0.1 mg/L)	Behavioral	Medium	789690

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	31 Day(s), (66 Day(s))	<i>Gasterosteus aculeatus</i> (Threespine Stickleback), Not reported, Not Reported, Wild (LAKE MYRDALSVATNET, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 10 ug/L / 100 ug/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR (10-100 ug/L)	Mortality	Uninformative	789532
85-68-7	66 Day(s), (66 Day(s))	<i>Gasterosteus aculeatus</i> (Threespine Stickleback), Not reported, Not Reported, Wild (LAKE MYRDALSVATNET, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 10 ug/L / 100 ug/L	Accumulation (Accumulation- Residue, Response Site: Not reported)	NR (10 ug/L)	ADME (biotransformation)	Uninformative	789532
85-68-7	66 Day(s), (66 Day(s))	<i>Gasterosteus aculeatus</i> (Threespine Stickleback), Not reported, Not Reported, Wild (LAKE MYRDALSVATNET, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 10 ug/L / 100 ug/L	Behavior (Feeding behavior-Food consumption, Response Site: Not reported)	LOEC (100 ug/L)	Behavioral	Medium	789532
85-68-7	66 Day(s), (66 Day(s))	<i>Gasterosteus aculeatus</i> (Threespine Stickleback), Not reported, Not Reported, Wild (LAKE MYRDALSVATNET, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 10 ug/L / 100 ug/L	Behavior (Feeding behavior-Food consumption, Response Site: Not reported)	NOEC (10 ug/L)	Behavioral	Medium	789532

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	66 Day(s), (66 Day(s))	<i>Gasterosteus aculeatus</i> (Threespine Stickleback), Not reported, Not Reported, Wild (LAKE MYRDALSVATNET, NORWAY)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 10 ug/L / 100 ug/L	Behavior (Feeding behavior-Feeding behavior, Response Site: Not reported)	NOEC (100 ug/L)	Behavioral	Medium	789532
85-68-7	1-21 Day(s), (21 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH FARMERS IN CONNECTICUT AND NEBRASKA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 9.73 ug/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (9.73 ug/L)	ADME (biotransformation)	Medium	18050
85-68-7	24 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (1.7 mg/L)	Mortality	Medium	2140000
85-68-7	24 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	LC50 (3.6 (2.8-4.6) mg/L)	Mortality	Medium	2140000

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.7 (1.0-2.8) mg/L)	Mortality	Medium	2140000
85-68-7	48 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (2.8 mg/L)	Mortality	Medium	2140000
85-68-7	72 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.7 (1.0-2.8) mg/L)	Mortality	Medium	2140000
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Physiology (Physiology- Physiology, general, Pigmentation, Respiration, Response Site: Not reported)	NR (0.36-7.8 mg/L)	Respiratory	Uninformative	2140000

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Behavior (Behavior-Activity, general,Equilibrium,Behavioral changes, general, Response Site: Not reported)	NR (0.36-7.8 mg/L)	Behavioral	Uninformative	2140000
85-68-7	96 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.7 (1.0-2.8) mg/L)	Mortality	Medium	2140000
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Growth (Morphology- General morphological changes, Response Site: Not reported)	NR (0.36-7.8 mg/L)	Development/Growth	Uninformative	2140000
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN CONNECTICUT)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Physiology (Physiology- Physiology, general,Pigmentation,Respiration, Response Site: Not reported)	NR (0.36-7.8 mg/L)	Skin and Connective Tissue	Uninformative	2140000

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Young of year, Not Reported, Laboratory (FROM COMMERCIAL FISH SUPPLIERS WITHIN THE CONTINENTAL UNITED STATES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (62 AI mg/L)	Mortality	Medium	18064
85-68-7	96 Hour(s), (96 Hour(s))	<i>Lepomis macrochirus</i> (Bluegill), Young of year, Not Reported, Laboratory (FROM COMMERCIAL FISH SUPPLIERS WITHIN THE CONTINENTAL UNITED STATES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (43 (38-52) AI mg/L)	Mortality	Medium	18064
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, 8 Organism	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (0.034 mg/L)	ADME (biotransformation)	High	1359448
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, 16 Organism	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Accumulation (Accumulation-Residue, Response Site: Fin, Head, Internal body parts, Viscera)	BCF (0.06 mg/L)	ADME (biotransformation)	High	1359448

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, 16 Organism	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Accumulation (Accumulation-Residue, Response Site: Muscle, Skin, epidermis, Skeleton)	BCF (0.06 mg/L)	ADME (biotransformation)	High	1359448
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, 8 Organism	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (0.06 mg/L)	ADME (biotransformation)	High	1359448
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, 16 Organism	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Accumulation (Accumulation-Residue, Response Site: Muscle, Skin, epidermis, Skeleton)	BCF (0.034 mg/L)	ADME (biotransformation)	High	1359448
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.034 (0.034-0.081) mg/L)	Mortality	High	1359448

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	3.27 Day(s), (3.27 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), <1 Year(s), Not Reported, Laboratory (OSAGE CATFISHERIES, OSAGE BEACH, MO, USA)	Fresh water, Aqueous (aquatic habitat), Flow-through, 16 Organism	Measured	0 mg/L / 0.034 (0.034-0.081) mg/L	Accumulation (Accumulation-Residue, Response Site: Fin, Head, Internal body parts, Viscera)	BCF (0.034 mg/L)	ADME (biotransformation)	High	1359448
85-68-7	7 Day(s), (21 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 208.08 (26-278) ug/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (208.08 (26-278) ug/L)	ADME (biotransformation)	Medium	1359250
85-68-7	7 Day(s), (21 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 2.62 (2.23-2.82) ug/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (2.62 (2.23-2.82) ug/L)	ADME (biotransformation)	Medium	1359250
85-68-7	7 Day(s), (21 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 23.11 (3.2-35.3) ug/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (23.11 (3.2-35.3) ug/L)	ADME (biotransformation)	Medium	1359250
85-68-7	17 Day(s), (38 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 2.96 (2.30-4.19) ug/L	Accumulation (Accumulation-Residue, Response Site: Whole organism)	BCF (2.96 (2.30-4.19) ug/L)	ADME (biotransformation)	Medium	1359250

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	17 Day(s), (38 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 2.96 (2.30-4.19) ug/L	Accumulation (Accumulation-Residue, Response Site: Vis-cera)	BCF (2.96 (2.30-4.19) ug/L)	ADME (biotrans-formation)	Medium	1359250
85-68-7	17 Day(s), (38 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 2.96 (2.30-4.19) ug/L	Accumulation (Accumulation-Residue, Response Site: Mus-cle)	BCF (2.96 (2.30-4.19) ug/L)	ADME (biotrans-formation)	Medium	1359250
85-68-7	21 Day(s), (38 Day(s))	<i>Lepomis macrochirus</i> (Bluegill), Not reported, Not Reported, Laboratory (OSAGE CATFISHERIES IN MISSOURI)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 2.96 (2.30-4.19) ug/L	Accumulation (Accumulation-Residue, Response Site: Whole organ-ism)	BCF (2.96 (2.30-4.19) ug/L)	ADME (biotrans-formation)	Medium	1359250
85-68-7	96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.82 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.48 mg/L)	Mortality	High	1321996
85-68-7	24 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rain-bow Trout), Not reported, Not Reported, Lab-oratory (COM-MERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (4.8 mg/L)	Mortality	Medium	2139998

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.3 (2.9-3.9) mg/L)	Mortality	Medium	2139998
85-68-7	48 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (4.6 mg/L)	Mortality	Medium	2139998
85-68-7	72 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.3 (2.9-3.9) mg/L)	Mortality	Medium	2139998
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Behavior (Behavior- Activity, general, Equilibrium, Behavioral changes, general, Response Site: Not reported)	NR (0.36-4.6 mg/L)	Behavioral	Uninformative	2139998

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.3 (2.9-3.9) mg/L)	Mortality	Medium	2139998
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN WASHINGTON)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.36 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L	Physiology (Physiology- Pigmentation, Response Site: Not reported)	NR (0.36-4.6 mg/L)	Skin and Connective Tissue	Uninformative	2139998
85-68-7	24 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (OBTAINED FROM COMMERCIAL FISH SUPPLIERS IN MARYLAND AND MONTANA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.016 mg/L / 0.17 (0.085-0.25) mg/L / 0.28 (0.10-0.49) mg/L / 0.48 (0.24-0.75) mg/L / 1.4 (1.3-1.5) mg/L / 3.1 (2.5-4.2) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.82 (0.48-1.4) mg/L)	Mortality	High	5530771
85-68-7	24 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (OBTAINED FROM COMMERCIAL FISH SUPPLIERS IN MARYLAND AND MONTANA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.016 mg/L / 0.17 (0.085-0.25) mg/L / 0.28 (0.10-0.49) mg/L / 0.48 (0.24-0.75) mg/L / 1.4 (1.3-1.5) mg/L / 3.1 (2.5-4.2) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (1.4 (1.3-1.5) mg/L)	Mortality	High	5530771

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (OBTAINED FROM COMMERCIAL FISH SUPPLIERS IN MARYLAND AND MONTANA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.016 mg/L / 0.17 (0.085-0.25) mg/L / 0.28 (0.10-0.49) mg/L / 0.48 (0.24-0.75) mg/L / 1.4 (1.3-1.5) mg/L / 3.1 (2.5-4.2) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.82 (0.48-1.4) mg/L)	Mortality	High	5530771
85-68-7	72 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (OBTAINED FROM COMMERCIAL FISH SUPPLIERS IN MARYLAND AND MONTANA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.016 mg/L / 0.17 (0.085-0.25) mg/L / 0.28 (0.10-0.49) mg/L / 0.48 (0.24-0.75) mg/L / 1.4 (1.3-1.5) mg/L / 3.1 (2.5-4.2) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.82 (0.48-1.4) mg/L)	Mortality	High	5530771
85-68-7	96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (OBTAINED FROM COMMERCIAL FISH SUPPLIERS IN MARYLAND AND MONTANA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.016 mg/L / 0.17 (0.085-0.25) mg/L / 0.28 (0.10-0.49) mg/L / 0.48 (0.24-0.75) mg/L / 1.4 (1.3-1.5) mg/L / 3.1 (2.5-4.2) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.48 (0.24-0.75) mg/L)	Mortality	High	5530771

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Not reported, Not Reported, Laboratory (OBTAINED FROM COMMERCIAL FISH SUPPLIERS IN MARYLAND AND MONTANA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.016 mg/L / 0.17 (0.085-0.25) mg/L / 0.28 (0.10-0.49) mg/L / 0.48 (0.24-0.75) mg/L / 1.4 (1.3-1.5) mg/L / 3.1 (2.5-4.2) mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (0.28 (0.10-0.49) mg/L)	Mortality	High	5530771
85-68-7	15 Day(s), (124 Day(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Eyed egg or stage, eyed embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 mg/L / 0.021 mg/L / 0.044 mg/L / 0.095 mg/L / 0.20 mg/L	Mortality (Mortality-Hatch, Response Site: Not reported)	NR (0.012-0.20 mg/L)	Mortality	High	680120
85-68-7	124 Day(s), (124 Day(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Eyed egg or stage, eyed embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 mg/L / 0.021 mg/L / 0.044 mg/L / 0.095 mg/L / 0.20 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.20 mg/L)	Mortality	High	680120
85-68-7	124 Day(s), (124 Day(s))	<i>Oncorhynchus mykiss</i> (Rainbow Trout), Eyed egg or stage, eyed embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 mg/L / 0.021 mg/L / 0.044 mg/L / 0.095 mg/L / 0.20 mg/L	Growth (Growth-Growth, general, Response Site: Whole organism)	NOEC (0.20 mg/L)	Development/Growth	High	680120
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Gonad(s))	NOEC (99.5 ug/L)	Development/Growth	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Cellular (Genetics-Sex expression change, Response Site: Not reported)	NR (5.91-99.5 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Cellular (Histology-Atresia,Degeneration,Fibrosis,Histological changes, general,Inflammation,Vacuolization, Response Site: Gonad(s),Liver,Oocyte,Thyroid)	NR (99.5 ug/L)	Reproductive/Teratogenic	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Cellular (Histology-Histological changes, general,Inflammation, Response Site: Gonad(s),Liver,Thyroid)	NR (99.5 ug/L)	Reproductive/Teratogenic	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Development-Sexual development, Response Site: Not reported)	NR (99.5 ug/L)	Development/Growth	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Development-Sexual development, Response Site: Not reported)	NR (5.91-99.5 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Development-Sexual development, Response Site: Not reported)	NR (99.5 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Gonad(s))	NOEC (99.5 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both, Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 10 Organism	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (99.5 ug/L)	Mortality	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Cellular (Genetics-Sex expression change, Response Site: Not reported)	NR (5.91-99.5 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Physiology (Injury-Papilloma, wart, Response Site: Fin)	NOEC (99.5 ug/L)	Reproductive/Teratogenic	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Morphology-Weight, Response Site: Gonad(s))	NOEC (99.5 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Development-Sexual development, Response Site: Not reported)	NR (5.91-99.5 ug/L)	Development/Growth	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sex- ually mature, 16 Weeks post-hatch, Both (Measured in: Female organ- isms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aque- ous (aquatic habi- tat), Flow-through, 5 Female organ- isms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Morphology- Weight, Response Site: Gonad(s))	NOEC (99.5 ug/L)	Develop- ment/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sex- ually mature, 16 Weeks post-hatch, Both (Measured in: Male organ- isms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aque- ous (aquatic habi- tat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Growth- Length, Response Site: Whole or- ganism)	LOEC (35.8 ug/L)	Develop- ment/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sex- ually mature, 16 Weeks post-hatch, Both (Measured in: Female organ- isms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aque- ous (aquatic habi- tat), Flow-through, 5 Female organ- isms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Reproduction (Reproduction- Fertilization, Response Site: Egg)	LOEC (5.91 ug/L)	Reproduc- tive/Teratogenic	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sex- ually mature, 16 Weeks post-hatch, Both (Measured in: Female organ- isms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aque- ous (aquatic habi- tat), Flow-through, 5 Female organ- isms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Growth- Length, Response Site: Whole or- ganism)	LOEC (99.5 ug/L)	Develop- ment/Growth	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Reproduction (Reproduction-Spermatogonia, Response Site: Gonad(s))	LOEC (99.5 ug/L)	Reproductive/Teratogenic	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Growth-Length, Response Site: Whole organism)	NOEC (14.4 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Growth-Length, Response Site: Whole organism)	NOEC (35.8 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NOEC (5.91 ug/L)	Reproductive/Teratogenic	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Cellular (Genetics-Vitellogenin mRNA, Response Site: Liver)	NOEC (99.5 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 2 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Cellular (Genetics-Vitellogenin mRNA, Response Site: Liver)	NOEC (99.5 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (99.5 ug/L)	Development/Growth	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Physiology (Injury-Papilloma, wart, Response Site: Fin)	NOEC (99.5 ug/L)	Reproductive/Teratogenic	High	10064181

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Female organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Female organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	LOEC (14.4 ug/L)	Reproductive/Teratogenic	High	10064181
85-68-7	21 Day(s), (21 Day(s))	<i>Oryzias latipes</i> (Japanese Medaka), Sexually mature, 16 Weeks post-hatch, Both (Measured in: Male organisms), Laboratory (IN-HOUSE CULTURES AT FEL)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Male organisms	Measured	<0.147 ug/L / 5.91 ug/L / 14.4 ug/L / 35.8 ug/L / 99.5 ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NR (5.91-99.5 ug/L)	Development/Growth	High	10064181
85-68-7	24 Hour(s), (24 Hour(s))	<i>Oryzias melastigma</i> (Indian Medaka), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 1.50 ppm	Biochemical (Hormone(s)-Estrogen (Oestrogen), Response Site: Liver)	NR (1.50 ppm)	Mechanistic: Biomarkers (exposure and effect); Receptor binding/ regulation of receptor activity; Endocrine toxicity; Reproductive/Teratogenic	Medium	2298079
85-68-7	24 Hour(s), (24 Hour(s))	<i>Oryzias melastigma</i> (Indian Medaka), Embryo, Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 1.50 ppm	Biochemical (Hormone(s)-Estrogen (Oestrogen), Response Site: Liver)	NR (1.50 ppm)	Mechanistic: Biomarkers (exposure and effect); Receptor binding/ regulation of receptor activity; Endocrine toxicity; Reproductive/Teratogenic	Medium	2298079

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (192 Hour(s))	<i>Parophrys vetulus</i> (English Sole), Young of year, Not Reported, Wild (COLLECTED FROM THE YAQUINA BAY ESTUARY AT NEWPORT, OR.)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Unmeasured	0 ppm / 0.130 ppm / 0.216 ppm / 0.36 ppm / 0.60 ppm / 1.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LET C (0.30 mg/L)	Mortality	High	1337257
85-68-7	96 Hour(s), (192 Hour(s))	<i>Parophrys vetulus</i> (English Sole), Young of year, Not Reported, Wild (COLLECTED FROM THE YAQUINA BAY ESTUARY AT NEWPORT, OR.)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 mg/L / 0.130 mg/L / 0.216 mg/L / 0.6 mg/L / 1.0 mg/L / 1.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LET C (0.45 mg/L)	Mortality	High	1337257
85-68-7	96 Hour(s), (192 Hour(s))	<i>Parophrys vetulus</i> (English Sole), Young of year, Not Reported, Wild (COLLECTED FROM THE YAQUINA BAY ESTUARY AT NEWPORT, OR.)	Salt water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 mg/L / 0.130 mg/L / 0.216 mg/L / 0.6 mg/L / 1.0 mg/L / 1.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.66 (0.53- 0.84) mg/L)	Mortality	High	1337257
85-68-7	96 Hour(s), (192 Hour(s))	<i>Parophrys vetulus</i> (English Sole), Young of year, Not Reported, Wild (COLLECTED FROM THE YAQUINA BAY ESTUARY AT NEWPORT, OR.)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Unmeasured	0 ppm / 0.130 ppm / 0.216 ppm / 0.36 ppm / 0.60 ppm / 1.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.55 (0.48- 0.64) mg/L)	Mortality	High	1337257

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	19 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Reproduction (Reproduction-Hatch, Response Site: Not reported)	NOEL (64.6 ug/L)	Reproductive/Teratogenic	High	5353208
85-68-7	21 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (18.1 ug/L)	Mortality	High	5353208
85-68-7	21 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Reproduction (Reproduction- Mean spawns per female, Response Site: Not reported)	NOEL (64.6 ug/L)	Reproductive/Teratogenic	High	5353208
85-68-7	21 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Reproduction (Reproduction- Fertilization, Response Site: Not reported)	NOEL (64.6 ug/L)	Reproductive/Teratogenic	High	5353208

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NOEL (64.6 ug/L)	Reproductive/Teratogenic	High	5353208
85-68-7	21 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEL (64.6 ug/L)	Mortality	High	5353208
85-68-7	21 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F0 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F0 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEL (64.6 ug/L)	Reproductive/Teratogenic	High	5353208
85-68-7	39 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: Fry), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Fry	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEL (64.6-67.5 ug/L)	Mortality	High	5353208

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~137 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: female, 1st generation), Both (Measured in: female, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA female, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	NOEL (64.6-67.5 ug/L)	Mechanistic: Biomarkers (exposure and effect)	High	5353208
85-68-7	~137 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: male, 1st generation), Both (Measured in: male, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA male, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	NOEL (64.6-67.5 ug/L)	Mechanistic: Biomarkers (exposure and effect)	High	5353208
85-68-7	152 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: F1 generation), Both, Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA F1 generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEL (64.6-67.5 ug/L)	Mortality	High	5353208

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85-68-7	164 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: female, 1st generation), Both (Measured in: female, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA female, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Growth (Growth-Length, Response Site: Whole organism)	NOEL (64.6-67.5 ug/L)	Development/Growth	High	5353208
85-68-7	164 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: male, 1st generation), Both (Measured in: male, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA male, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Growth (Growth-Length, Response Site: Whole organism)	NOEL (64.6-67.5 ug/L)	Development/Growth	High	5353208
85-68-7	164 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: female, 1st generation), Both (Measured in: female, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA female, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Cellular (Histology-Histological changes, general, Response Site: Not reported)	NR (18.1-67.5 ug/L)	Reproductive/Teratogenic	High	5353208

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85-68-7	164 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: male, 1st generation), Both (Measured in: male, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA male, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEL (64.6-67.5 ug/L)	Development/Growth	High	5353208
85-68-7	164 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: male, 1st generation), Both (Measured in: male, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA male, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Cellular (Histology-Histological changes, general, Response Site: Not reported)	NR (18.1-67.5 ug/L)	Reproductive/Teratogenic	High	5353208
85-68-7	164 Day(s), (164 Day(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Sexually mature, 4 Month(s) (Measured in: female, 1st generation), Both (Measured in: female, 1st generation), Laboratory (FROM IN HOUSE CULTURES)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA female, 1st generation	Measured	0 ug/L / 0 ug/L / 18.1 ug/L / 64.6-67.5 ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEL (64.6-67.5 ug/L)	Development/Growth	High	5353208

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85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.78 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.44 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.78 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Juvenile, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.50 mg/L)	Mortality	High	1321996
85-68-7	24 Hour(s), (24 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Larva, 5 Days post fertilization, Not Reported, Laboratory (ON-SITE BREEDING CULTURE AT THE U.S. EPA ANDREW W. BREIDENBACH ENVIRONMENTAL RESEARCH CENTER (AWBERC) IN CINCINNATI, OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.0027- 0.0030 mg/L / 0.0064-0.0067 mg/L / 0.014- 0.018 mg/L / 0.033-0.039 mg/L / 0.091- 0.10 mg/L / 0.21 mg/L / 0.52 mg/L / 1.0 mg/L / 1.7 mg/L	Behavior (Behavior-Startle, Response Site: Not reported)	EC50 (0.09 mg/L)	Behavioral	High	11581733

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (24 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Larva, 5 Days post fertilization, Not Reported, Laboratory (ON-SITE BREEDING CULTURE AT THE U.S. EPA ANDREW W. BREIDENBACH ENVIRONMENTAL RESEARCH CENTER (AWBERC) IN CINCINNATI, OHIO)	Fresh water, Aqueous (aquatic habitat), Static, 13 Organism	Measured	0 mg/L / 0 mg/L / 0.0027-0.0030 mg/L / 0.0064-0.0067 mg/L / 0.014-0.018 mg/L / 0.033-0.039 mg/L / 0.091-0.10 mg/L / 0.21 mg/L / 0.52 mg/L / 1.0 mg/L / 1.7 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (1.0 mg/L)	Mortality	High	11581733
85-68-7	24 Hour(s), (24 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Larva, 5 Days post fertilization, Not Reported, Laboratory (ON-SITE BREEDING CULTURE AT THE U.S. EPA ANDREW W. BREIDENBACH ENVIRONMENTAL RESEARCH CENTER (AWBERC) IN CINCINNATI, OHIO)	Fresh water, Aqueous (aquatic habitat), Static, 13 Organism	Measured	0 mg/L / 0 mg/L / 0.0027-0.0030 mg/L / 0.0064-0.0067 mg/L / 0.014-0.018 mg/L / 0.033-0.039 mg/L / 0.091-0.10 mg/L / 0.21 mg/L / 0.52 mg/L / 1.0 mg/L / 1.7 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (1.7 mg/L)	Mortality	High	11581733

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (24 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Larva, 5 Days post fertilization, Not Reported, Laboratory (ON-SITE BREEDING CULTURE AT THE U.S. EPA ANDREW W. BREIDENBACH ENVIRONMENTAL RESEARCH CENTER (AWBERC) IN CINCINNATI, OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.0027-0.0030 mg/L / 0.0064-0.0067 mg/L / 0.014-0.018 mg/L / 0.033-0.039 mg/L / 0.091-0.10 mg/L / 0.21 mg/L / 0.52 mg/L / 1.0 mg/L / 1.7 mg/L	Biochemical (Biochemistry-Metabolome, Response Site: Not reported)	BMD10 (0.12 mg/L)	Mechanistic: Cell signaling/function	High	11581733
85-68-7	24 Hour(s), (24 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Larva, 5 Days post fertilization, Not Reported, Laboratory (ON-SITE BREEDING CULTURE AT THE U.S. EPA ANDREW W. BREIDENBACH ENVIRONMENTAL RESEARCH CENTER (AWBERC) IN CINCINNATI, OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.0027-0.0030 mg/L / 0.0064-0.0067 mg/L / 0.014-0.018 mg/L / 0.033-0.039 mg/L / 0.091-0.10 mg/L / 0.21 mg/L / 0.52 mg/L / 1.0 mg/L / 1.7 mg/L	Cellular (Genetics-Gene expression, Response Site: Not reported)	BMDL (0.06 mg/L)	Mechanistic: Cell signaling/function	High	11581733

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85-68-7	24 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT EG AND G, BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0043 mg/L / <0.0037-0.23 mg/L / <0.0042-0.46 mg/L / <0.0037-0.86 mg/L / <0.0037-1.0 mg/L / <0.0037-1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Uninformative	1316188
85-68-7	48 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT EG AND G, BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0043 mg/L / <0.0037-0.23 mg/L / <0.0042-0.46 mg/L / <0.0037-0.86 mg/L / <0.0037-1.0 mg/L / <0.0037-1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Uninformative	1316188
85-68-7	72 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT EG AND G, BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0043 mg/L / <0.0037-0.23 mg/L / <0.0042-0.46 mg/L / <0.0037-0.86 mg/L / <0.0037-1.0 mg/L / <0.0037-1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Uninformative	1316188

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85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT EG AND G, BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0043 mg/L / <0.0037-0.23 mg/L / <0.0042-0.46 mg/L / <0.0037-0.86 mg/L / <0.0037-1.0 mg/L / <0.0037-1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (<0.0037-1.6 mg/L)	Mortality	Uninformative	1316188
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT EG AND G, BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0043 mg/L / <0.0037-0.23 mg/L / <0.0042-0.46 mg/L / <0.0037-0.86 mg/L / <0.0037-1.0 mg/L / <0.0037-1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Uninformative	1316188
85-68-7	24 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (EG AND G BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0074 mg/L / 0.075 (0.036-0.12) mg/L / 0.16 (0.063-0.30) mg/L / 0.44 (0.33-0.56) mg/L / 1.0 (0.91-1.1) mg/L / 2.4 (2.1-2.7) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.5 (1.3-1.9) mg/L)	Mortality	High	1316189

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85-68-7	48 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (EG AND G BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0074 mg/L / 0.075 (0.036-0.12) mg/L / 0.16 (0.063-0.30) mg/L / 0.44 (0.33-0.56) mg/L / 1.0 (0.91-1.1) mg/L / 2.4 (2.1-2.7) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.5 (1.0-2.4) mg/L)	Mortality	High	1316189
85-68-7	72 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (EG AND G BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0074 mg/L / 0.075 (0.036-0.12) mg/L / 0.16 (0.063-0.30) mg/L / 0.44 (0.33-0.56) mg/L / 1.0 (0.91-1.1) mg/L / 2.4 (2.1-2.7) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.5 (1.0-2.4) mg/L)	Mortality	High	1316189
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (EG AND G BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Measured	<0.0074 mg/L / 0.075 (0.036-0.12) mg/L / 0.16 (0.063-0.30) mg/L / 0.44 (0.33-0.56) mg/L / 1.0 (0.91-1.1) mg/L / 2.4 (2.1-2.7) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (1.0 (0.91-1.1) mg/L)	Mortality	High	1316189
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (EG AND G BIONOMICS, WARE-HAM, MAS-SACHUSETTS)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Measured	<0.0074 mg/L / 0.075 (0.036-0.12) mg/L / 0.16 (0.063-0.30) mg/L / 0.44 (0.33-0.56) mg/L / 1.0 (0.91-1.1) mg/L / 2.4 (2.1-2.7) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.44 (0.33-0.56) mg/L)	Mortality	High	1316189

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.3 (2.8-3.9) mg/L)	Mortality	Medium	2139996
85-68-7	24 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (1.7 mg/L)	Mortality	Medium	2139996
85-68-7	48 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (4.6 mg/L)	Mortality	Medium	2139996
85-68-7	48 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.1 (1.7-2.5) mg/L)	Mortality	Medium	2139996

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.1 (1.7-2.5) mg/L)	Mortality	Medium	2139996
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Behavior (Behavior- Equilibrium, Behavioral changes, general, Swimming, Response Site: Not reported)	NR (0.60-7.8 mg/L)	Behavioral	Uninformative	2139996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.1 (1.7-2.5) mg/L)	Mortality	Medium	2139996
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.60 mg/L / 1.0 mg/L / 1.7 mg/L / 2.2 mg/L / 2.8 mg/L / 4.6 mg/L / 7.8 mg/L	Physiology (Physiology- Physiology, general, Pigmentation, Response Site: Not reported)	NR (0.60-7.8 mg/L)	Skin and Connective Tissue	Uninformative	2139996

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (10 (7.8-15) mg/L)	Mortality	High	2140001
85-68-7	48 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (5.3 (4.3-6.5) mg/L)	Mortality	High	2140001
85-68-7	48 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (13 mg/L)	Mortality	High	2140001
85-68-7	72 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (5.3 (4.3-6.5) mg/L)	Mortality	High	2140001

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (2.2 mg/L)	Mortality	High	2140001
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Physiology (Physiology- Physiology, general,Pigmentation,Respiration, Response Site: Not reported)	NR (0.78-13 mg/L)	Respiratory	High	2140001
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Growth (Morphology- Abnormal,General morphological changes, Response Site: Not reported)	NR (0.78-13 mg/L)	Development/Growth	High	2140001
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Physiology (Physiology- Physiology, general,Pigmentation,Respiration, Response Site: Not reported)	NR (0.78-13 mg/L)	Skin and Connective Tissue	High	2140001

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (5.3 (4.3-6.5) mg/L)	Mortality	High	2140001
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Pimephales promelas</i> (Fat-head Minnow), Not reported, Not Reported, Laboratory (OBTAINED FROM A COMMERCIAL FISH SUPPLIER IN OHIO)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.78 mg/L / 1.3 mg/L / 2.2 mg/L / 3.4 mg/L / 5.0 mg/L / 7.8 mg/L / 13 mg/L	Behavior (Behavior- Activity, general, Equilibrium, Behavioral changes, general, Response Site: Not reported)	NR (0.78-13 mg/L)	Behavioral	High	2140001
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both, Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA- ZENECA LIMITED, BRIX- HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Reproduction (Reproduction- Eggs per nest, Response Site: Not reported)	LOEC (69-82 ug/L)	Reproductive/Teratogenic	High	1464882
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both, Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA- ZENECA LIMITED, BRIX- HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Growth (Development- Sexual development, Response Site: Not re- ported)	NR (69-82 ug/L)	Development/Growth	High	1464882

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both (Measured in: Female organisms), Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Female organisms	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	NOEC (69-82 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity; Reproductive/Teratogenic	High	1464882
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both, Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Reproduction (Reproduction-Number spawning, Response Site: Not reported)	LOEC (69-82 ug/L)	Reproductive/Teratogenic	High	1464882
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both, Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (69-82 ug/L)	Mortality	High	1464882

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both (Measured in: Male organisms), Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Male organisms	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Biochemical (Biochemistry-Vitellogenin, Response Site: Plasma)	NOEC (69-82 ug/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Endocrine toxicity; Reproductive/Teratogenic	High	1464882
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both, Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (69-82 ug/L)	Reproductive/Teratogenic	High	1464882
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both (Measured in: Male organisms), Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Male organisms	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Testes)	NOEC (69-82 ug/L)	Development/Growth	High	1464882

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both (Measured in: Female organisms), Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Female organisms	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Growth (Morphology-Organ weight in relationship to body weight, Response Site: Ovaries)	NOEC (69-82 ug/L)	Development/Growth	High	1464882
85-68-7	3 Week(s), (3 Week(s))	<i>Pimephales promelas</i> (Fathead Minnow), Adult, 6 Month(s), Both, Laboratory (BREED-ING STOCKS MAINTAINED AT ASTRA-ZENECA LIM-ITED, BRIX-HAM, U.K.)	Fresh water, Aqueous (aquatic habitat), Flow-through, NA Both male and female	Measured	0 ug/L / 0 ug/L / 69-82 ug/L	Growth (Growth-Length,Weight, Response Site: Whole organism)	NR (69-82 ug/L)	Development/Growth	High	1464882
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Mortality (Mortality-Survival, Response Site: Not reported)	NR (1.0-16.0 AI g/kg diet)	Mortality	Medium	2298076

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Population (Population-Sex ratio, Response Site: Not reported)	NOEC (4.0 AI g/kg diet)	Reproductive/Teratogenic	Medium	2298076
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (4.0 AI g/kg diet)	Development/Growth	Medium	2298076
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Growth (Growth-Condition index, Response Site: Whole organism)	LOEC (8.0 AI g/kg diet)	Development/Growth	Medium	2298076
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Population (Population-Sex ratio, Response Site: Not reported)	LOEC (8.0 AI g/kg diet)	Reproductive/Teratogenic	Medium	2298076

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Growth (Growth-Length, Response Site: Whole organism)	NOEC (2.0 AI g/kg diet)	Development/Growth	Medium	2298076
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (2.0 AI g/kg diet)	Development/Growth	Medium	2298076
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Growth (Growth-Condition index, Response Site: Whole organism)	NOEC (4.0 AI g/kg diet)	Development/Growth	Medium	2298076
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Growth (Growth-Length, Response Site: Whole organism)	LOEC (4.0 AI g/kg diet)	Development/Growth	Medium	2298076

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Aquatic: Fish Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	35 Day(s), (10 Week(s))	<i>Sander lucioperca</i> (Zander), Juvenile, 61 Days post-hatch, Both, Laboratory (DEPARTMENT OF STURGEON BREEDING, INLAND FISHERIES INSTITUTE, POLAND)	Fresh water, Oral (diet, drink, gavage), Food, Not Reported	Unmeasured	0 AI g/kg diet / 1.0 AI g/kg diet / 2.0 AI g/kg diet / 4.0 AI g/kg diet / 8.0 AI g/kg diet / 16.0 AI g/kg diet	Reproduction (Reproduction-Abnormal, Response Site: Gonad(s))	NR (1.0-16.0 AI g/kg diet)	Reproductive/Teratogenic	Medium	2298076

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.32 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.90 mg/L)	Mortality	High	1321996
85-68-7	24 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>3.0 ppm)	Mortality	High	1359176
85-68-7	24 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>3.0 ppm)	Mortality	High	1359176

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.2 (1.8-3.0) ppm)	Mortality	High	1359176
85-68-7	48 Hour(s), (96 Hour(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.2 (1.8-3.0) ppm)	Mortality	High	1359176
85-68-7	72 Hour(s), (96 Hour(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.2 (1.0-1.6) ppm)	Mortality	High	1359176

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (96 Hour(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.2 (1.0-1.6) ppm)	Mortality	High	1359176
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.9 (0.7-1.2) ppm)	Mortality	High	1359176
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), 6-8 Day(s), Not Reported, Laboratory (OB-TAINED FROM A CULTURE MAINTAINED AT BIONOMICS MARINE RESEARCH LABORATORY)	Salt water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 ppm / 0 ppm / 0.4 ppm / 0.6 ppm / 1.1 ppm / 1.8 ppm / 3.0 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.9 (0.7-1.2) ppm)	Mortality	High	1359176

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Americanaysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.74 mg/L)	Mortality	High	5530739
85-68-7	48 Hour(s), (96 Hour(s))	<i>Americanaysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.74 mg/L)	Mortality	High	5530739
85-68-7	72 Hour(s), (96 Hour(s))	<i>Americanaysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.74 mg/L)	Mortality	High	5530739

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanaysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.041 (0.019-0.064) mg/L)	Mortality	High	5530739
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanaysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.12 (0.096-0.15) mg/L)	Mortality	High	5530739
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanaysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (0.12 (0.096-0.15) mg/L)	Mortality	High	5530739

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>0.74 mg/L)	Mortality	High	5530739
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.1 (0.60- 8.3) mg/L)	Mortality	High	5530739
85-68-7	96 Hour(s), (96 Hour(s))	<i>Americanysis bahia</i> (Opossum Shrimp), <=24 Hour(s), Not Reported, Laboratory (SPRING-BORN LIFE SCIENCES, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.013- <0.015 mg/L / <0.013- <0.015 mg/L / 0.041 (0.019- 0.064) mg/L / 0.12 (0.096- 0.15) mg/L / 0.23 (0.17- 0.26) mg/L / 0.41 (0.22- 0.54) mg/L / 0.74 (0.50- 0.99) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (0.23 (0.17- 0.26) mg/L)	Mortality	High	5530739

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	28 Day(s), (28 Day(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both (Measured in: Male organisms), Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, NA Male organisms	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Growth (Growth-Weight, Response Site: Whole organism)	MATC (0.11 mg/L)	Development/Growth	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both, Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	MATC (0.11 mg/L)	Reproductive/Teratogenic	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both, Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	MATC (0.13 mg/L)	Mortality	High	6574650

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	28 Day(s), (28 Day(s))	<i>Americanysis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both (Measured in: Female organisms), Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, NA Female organisms	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (0.075 (0.065-0.084) mg/L)	Development/Growth	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanysis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both (Measured in: Male organisms), Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, NA Male organisms	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (0.17 (0.14-0.20) mg/L)	Development/Growth	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanysis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both, Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NOEC (0.075 (0.065-0.084) mg/L)	Reproductive/Teratogenic	High	6574650

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	28 Day(s), (28 Day(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both, Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.17 (0.14-0.20) mg/L)	Mortality	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both, Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (0.75 (0.38-1.32) mg/L)	Mortality	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanopsis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both (Measured in: Female organisms), Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, NA Female organisms	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Growth (Growth-Weight, Response Site: Whole organism)	MATC (0.11 mg/L)	Development/Growth	High	6574650

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	28 Day(s), (28 Day(s))	<i>Americanysis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both (Measured in: Female organisms), Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, NA Female organisms	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (0.17 (0.14-0.20) mg/L)	Development/Growth	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanysis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both, Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	LOEC (0.17 (0.14-0.20) mg/L)	Reproductive/Teratogenic	High	6574650
85-68-7	28 Day(s), (28 Day(s))	<i>Americanysis bahia</i> (Opossum Shrimp), Juvenile, <24 Hour(s), Both (Measured in: Male organisms), Laboratory (OB-TAINED FROM THE LABORATORY'S IN HOUSE CULTURE SYSTEM)	Salt water, Aqueous (aquatic habitat), Flow-through, NA Male organisms	Measured	<0.0061 mg/L / <0.0061 mg/L / 0.024 (0.019-0.032) mg/L / 0.041 (0.025-0.062) mg/L / 0.075 (0.065-0.084) mg/L / 0.17 (0.14-0.20) mg/L / 0.75 (0.38-1.32) mg/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (0.075 (0.065-0.084) mg/L)	Development/Growth	High	6574650

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Day(s), (10 Day(s))	<i>Chironomus tentans</i> (Midge), 9-11 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.070 mg/L / 0.142 mg/L / 0.317 mg/L / 0.638 mg/L / 1.76 mg/L	Growth (Growth-Weight, Response Site: Whole organism)	EC50 (1.42 mg/L)	Development/Growth	High	679312
85-68-7	10 Day(s), (10 Day(s))	<i>Chironomus tentans</i> (Midge), 9-11 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.070 mg/L / 0.142 mg/L / 0.317 mg/L / 0.638 mg/L / 1.76 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.142- 0.317 mg/L)	Mortality	High	679312
85-68-7	10 Day(s), (10 Day(s))	<i>Chironomus tentans</i> (Midge), 9-11 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.070 mg/L / 0.142 mg/L / 0.317 mg/L / 0.638 mg/L / 1.76 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR (0.638-1.76 mg/L)	Mortality	High	679312

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Day(s), (10 Day(s))	<i>Chironomus tentans</i> (Midge), 9-11 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.070 mg/L / 0.142 mg/L / 0.317 mg/L / 0.638 mg/L / 1.76 mg/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (1.76 mg/L)	Development/Growth	High	679312
85-68-7	10 Day(s), (10 Day(s))	<i>Chironomus tentans</i> (Midge), 9-11 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.070 mg/L / 0.142 mg/L / 0.317 mg/L / 0.638 mg/L / 1.76 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR (0.070 mg/L)	Mortality	High	679312
85-68-7	10 Day(s), (10 Day(s))	<i>Chironomus tentans</i> (Midge), 9-11 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.070 mg/L / 0.142 mg/L / 0.317 mg/L / 0.638 mg/L / 1.76 mg/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (0.64 mg/L)	Development/Growth	High	679312
85-68-7	24 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), Instar, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.5 mg/L)	Immobilization	Medium	1359257

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (1.25 mg/L)	Immobilization	Medium	1359257
85-68-7	24 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (2.69 (2.08- 3.58) mg/L)	Immobilization	Medium	1359257
85-68-7	24 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (2.5 mg/L)	Immobilization	Medium	1359257
85-68-7	24 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.53852 mg/L)	Immobilization	Medium	1359257
85-68-7	48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.64 (1.22- 2.17) mg/L)	Immobilization	Medium	1359257

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.66483 (1.22393-2.10996) mg/L)	Immobilization	Medium	1359257
85-68-7	48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.66483 mg/L)	Immobilization	Medium	1359257
85-68-7	48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (2.5 mg/L)	Immobilization	Medium	1359257
85-68-7	48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (1.25 mg/L)	Immobilization	Medium	1359257
85-68-7	24-48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), In-star, 10-14 Day(s), Not Reported, Laboratory (CULTURED AT THE MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 1.25 mg/L / 2.5 mg/L / 5 mg/L / 10 mg/L / 20 mg/L	Physiology (Intoxication- Immobile, Response Site: Not reported)	NR (1.25-20 mg/L)	Immobilization	Medium	1359257

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Chironomus tentans</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.22 mg/L / 0.39 mg/L / 2.18 mg/L / 3.90 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.6 (2.9-4.9) mg/L)	Mortality	Medium	1359238
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (>0.96 mg/L)	Immobilization	High	1321996
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	NOEC (0.96 mg/L)	Immobilization	High	1321996
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.2 mg/L / NR / NR / NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (5.0 (4.1-6.1) mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.25 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (>10 mg/L)	Immobilization	Uninformative	5353206

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (4.4 (3.7-6.1) mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (6.6 (4.6-11.8) mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 2.5 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (>10 mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (3.1 (2.3-4.1) mg/L)	Immobilization	Uninformative	5353206

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.7 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.2 (1.1-1.3) mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (2.4 (1.8-3.2) mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (>10 mg/L)	Immobilization	Uninformative	5353206
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (>10 mg/L)	Immobilization	Uninformative	5353206

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 2.5 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (>10 mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 2.5 mg/L / NR / NR / NR / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (2.5 mg/L)	Mortality	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (2.9 (2.5-3.3) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (2.2 (1.8-2.6) mg/L)	Immobilization	Uninformative	5353206

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.8 (1.1-3.1) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.6 (1.2-2.2) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.62 mg/L)	Mortality	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (1.3 mg/L)	Mortality	Uninformative	5353206

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (2.1 (1.8-2.6) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.6 (1.4-1.8) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.62 mg/L / NR / NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.62 mg/L)	Mortality	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.7 mg/L / NR / NR / NR / NR	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.0 (0.9-1.1) mg/L)	Immobilization	Uninformative	5353206

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.7 mg/L / NR / NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (<0.7 mg/L)	Mortality	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.2 mg/L / NR / NR / NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (4.1 (3.5-4.9) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.2 mg/L / NR / NR / NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (1.2 mg/L)	Mortality	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.25 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (>10 mg/L)	Immobilization	Uninformative	5353206

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.25 mg/L / NR / NR / NR / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (<1.25 mg/L)	Mortality	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / 10 mg/L	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (4.7 (4.0-6.0) mg/L)	Immobilization	Uninformative	5353206
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (OBTAINED FROM LABORATORY CULTURES OF PARTHENOGENIC FEMALES)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 1.3 mg/L / NR / NR / NR / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (<1.3 mg/L)	Mortality	Uninformative	5353206
85-68-7	20 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (OBTAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F1 generation	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Reproduction (Reproduction- Progeny counts/numbers, Response Site: Not reported)	NOEC (0.17 mg/L)	Reproductive/Teratogenic	High	5353200

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	20 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F1	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (0.76 mg/L)	Reproductive/Teratogenic	High	5353200
85-68-7	7-21 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F1	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NR (0.035-0.76 mg/L)	Mortality	High	5353200
85-68-7	21 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F1	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (0.76 mg/L)	Reproductive/Teratogenic	High	5353200

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F1	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.17 mg/L)	Reproductive/Teratogenic	High	5353200
85-68-7	28-35 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F2 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F2	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NR (0.035-0.76 mg/L)	Mortality	High	5353200
85-68-7	28-42 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F2 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F2	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (0.76 mg/L)	Reproductive/Teratogenic	High	5353200

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	42 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F2 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F2	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (0.76 mg/L)	Mortality	High	5353200
85-68-7	42 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F2 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F2	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.17 mg/L)	Mortality	High	5353200
85-68-7	42 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Multiple (Multiple- effects reported as one result, Response Site: Not reported)	MATC (>0.17- <0.76 mg/L)	Reproductive/Teratogenic	High	5353200

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	28-42 Day(s), (42 Day(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s) (Measured in: F2 generation), Not Reported, Laboratory (OB-TAINED FROM CULTURES MAINTAINED AT E G AND G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, NA F2 generation	Measured	<0.01 mg/L / <0.01 mg/L / 0.035 mg/L / 0.058 mg/L / 0.099 mg/L / 0.17 mg/L / 0.76 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.17 mg/L)	Reproductive/Teratogenic	High	5353200
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.25) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (1.4 (0.98- 1.6) mg/L)	Mortality	High	1316195
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.25) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18- 0.44) mg/L)	Reproductive/Teratogenic	High	1316195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Mortality	High	1316195
85-68-7	8 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Reproductive/Teratogenic	High	1316195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	8 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	9 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	9 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Reproductive/Teratogenic	High	1316195

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	10 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	13 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	13 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18- 0.44) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	14 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.28 (0.18- 0.44) mg/L)	Mortality	High	1316195
85-68-7	14 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18- 0.44) mg/L)	Reproductive/Teratogenic	High	1316195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	14 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (1.4 (0.98- 1.6) mg/L)	Mortality	High	1316195
85-68-7	14 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98- 1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	15 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18- 0.44) mg/L)	Reproductive/Teratogenic	High	1316195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	15 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	16 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	16 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Reproductive/Teratogenic	High	1316195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	17 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	17 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	20 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 (0.98-1.6) mg/L)	Reproductive/Teratogenic	High	1316195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	20 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), Adult, <=24 Hour(s), Not Reported, Laboratory (OB-TAINED FROM LABORATORY STOCKS CULTURED AT SPRINGBORN BIONOMICS, INC.)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.025 (<0.0071- <0.025) mg/L / 0.073 (0.050- 0.084) mg/L / 0.23 (0.13- 0.34) mg/L / 0.28 (0.18- 0.44) mg/L / 1.4 (0.98-1.6) mg/L / 2.4 (2.2-2.8) mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 (0.18-0.44) mg/L)	Reproductive/Teratogenic	High	1316195
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (EG&G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0033 mg/L / 0.15-0.20 mg/L / 0.21 mg/L / 0.40-0.65 mg/L / 0.13-0.80 mg/L / 0.52-1.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.4 mg/L)	Mortality	Medium	1316223
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (EG&G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0033 mg/L / 0.15-0.20 mg/L / 0.21 mg/L / 0.40-0.65 mg/L / 0.13-0.80 mg/L / 0.52-1.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.4 mg/L)	Mortality	Medium	1316223
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (EG&G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0033 mg/L / 0.15-0.20 mg/L / 0.21 mg/L / 0.40-0.65 mg/L / 0.13-0.80 mg/L / 0.52-1.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (1.4 mg/L)	Mortality	Medium	1316223

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (EG&G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0033 mg/L / 0.15-0.20 mg/L / 0.21 mg/L / 0.40-0.65 mg/L / 0.13-0.80 mg/L / 0.52-1.5 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.52-1.4 mg/L)	Mortality	Medium	1316223
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (EG&G BIONOMICS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.0033 mg/L / 0.15-0.20 mg/L / 0.21 mg/L / 0.40-0.65 mg/L / 0.13-0.80 mg/L / 0.52-1.5 mg/L	Multiple (Multiple- Multiple effects reported as one result, Response Site: Not reported)	NOEC (1.4 mg/L)	Mortality	Medium	1316223
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Chemical analysis reported	NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC10 (3.37 mg/L)	Immobilization	Uninformative	789536
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Chemical analysis reported	NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (7.74 mg/L)	Immobilization	Uninformative	789536
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Chemical analysis reported	NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (2.43 (2.22-2.94) mg/L)	Immobilization	Uninformative	789536
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <24 Hour(s), Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Chemical analysis reported	NR / NR	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC10 (1.73 (1.42-1.90) mg/L)	Immobilization	Uninformative	789536
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication- Immobile, Response Site: Not reported)	EC50 (5.2 (3.1-8.6) mg/L)	Immobilization	Medium	1359249

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	LOEC (2 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC84 (3.65 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC84 (8.6 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	NOEC (1 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC16 (3.1 mg/L)	Immobilization	Medium	1359249

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	LOEC (4 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC16 (1.05 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	NOEC (2 mg/L)	Immobilization	Medium	1359249
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (2.2 (1.53-3.17) mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC16 (2.4 mg/L)	Immobilization	Medium	1359249

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24-48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	NR (0.5-10 mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC16 (1.32 mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC84 (9.6 mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	NOEC (1 mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.7 (1.02-2.85) mg/L)	Immobilization	Medium	1359249

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85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	LOEC (2 mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (4.8 (2.4-9.6) mg/L)	Immobilization	Medium	1359249
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), <18 Hour(s), Not Reported, Laboratory (CULTURED AT MIC AQUATIC LABORATORY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Chemical analysis reported	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L / 4 mg/L / 7 mg/L / 10 mg/L	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC84 (2.85 mg/L)	Immobilization	Medium	1359249
85-68-7	2 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	4 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Growth (Growth-Length, Response Site: Whole organism)	MATC (>0.70 mg/L)	Development/Growth	Medium	1359268
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Growth (Growth-Length, Response Site: Whole organism)	NOEC (0.70 (0.46-0.93) mg/L)	Development/Growth	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	7 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268
85-68-7	9 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268
85-68-7	11 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	14 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268
85-68-7	16 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268
85-68-7	18 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (1.78 (1.72-1.84) mg/L)	Mortality	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NOEC (0.35 (0.26-0.44) mg/L)	Reproductive/Teratogenic	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.35 (0.26-0.44) mg/L)	Mortality	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Growth (Growth-Length, Response Site: Whole organism)	NOEC (0.35 (0.26-0.44) mg/L)	Development/Growth	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NOEC (0.22 (0.15-0.28) mg/L)	Reproductive/Teratogenic	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Whole organism)	MATC (>0.35- <0.70 mg/L)	Reproductive/Teratogenic	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality- Survival, Response Site: Not reported)	MATC (>0.35- <0.70 mg/L)	Mortality	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Growth (Growth- Length, Response Site: Whole organism)	MATC (>0.35- <0.70 mg/L)	Development/Growth	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Reproduction (Reproduction- Fecundity, Response Site: Whole organism)	MATC (>0.22- <0.35 mg/L)	Reproductive/Teratogenic	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Reproduction (Reproduction- Fecundity, Response Site: Not reported)	LOEC (0.70 (0.46- 0.93) mg/L)	Reproductive/Teratogenic	Medium	1359268

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (0.70 (0.46-0.93) mg/L)	Mortality	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Growth (Growth-Length, Response Site: Whole organism)	LOEC (0.70 (0.46-0.93) mg/L)	Development/Growth	Medium	1359268
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Measured	0 mg/L / 0 mg/L / 0.12 (0.09-0.15) mg/L / 0.22 (0.15-0.28) mg/L / 0.35 (0.26-0.44) mg/L / 0.70 (0.46-0.93) mg/L / 1.78 (1.72-1.84) mg/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	LOEC (0.35 (0.26-0.44) mg/L)	Reproductive/Teratogenic	Medium	1359268
85-68-7	24 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	Not Reported	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (3.76 mg/L)	Immobilization	Uninformative	2140006

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	Not Reported	Physiology (Intoxication-Immobile, Response Site: Not reported)	NOEC (0.82 mg/L)	Immobilization	Uninformative	2140006
85-68-7	48 Hour(s), (48 Hour(s))	<i>Daphnia magna</i> (Water Flea), Not reported, Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	Not Reported	Physiology (Intoxication-Immobile, Response Site: Not reported)	EC50 (1.83 mg/L)	Immobilization	Uninformative	2140006
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory (SPRINGBORN LABORATORIES)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.073 mg/L / 0.23 mg/L / 0.28 mg/L / 1.4 mg/L / 2.4 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEC (0.28 mg/L)	Reproductive/Teratogenic	High	680120
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory (SPRINGBORN LABORATORIES)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.073 mg/L / 0.23 mg/L / 0.28 mg/L / 1.4 mg/L / 2.4 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NOEC (0.28 mg/L)	Mortality	High	680120
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory (SPRINGBORN LABORATORIES)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.073 mg/L / 0.23 mg/L / 0.28 mg/L / 1.4 mg/L / 2.4 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	LOEC (1.4 mg/L)	Mortality	High	680120
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory (SPRINGBORN LABORATORIES)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.073 mg/L / 0.23 mg/L / 0.28 mg/L / 1.4 mg/L / 2.4 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	LOEC (1.4 mg/L)	Reproductive/Teratogenic	High	680120

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory (SPRINGBORN LABORATORIES)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.073 mg/L / 0.23 mg/L / 0.28 mg/L / 1.4 mg/L / 2.4 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	MATC (0.63 mg/L)	Mortality	High	680120
85-68-7	21 Day(s), (21 Day(s))	<i>Daphnia magna</i> (Water Flea), <=24 Hour(s), Not Reported, Laboratory (SPRINGBORN LABORATORIES)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.073 mg/L / 0.23 mg/L / 0.28 mg/L / 1.4 mg/L / 2.4 mg/L	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	MATC (0.63 mg/L)	Reproductive/Teratogenic	High	680120
85-68-7	96 Hour(s), (96 Hour(s))	<i>Farfantepenaeus duorarum</i> (Northern Pink Shrimp), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHRIMP SUPPLIER IN FLORIDA)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.061 mg/L / <0.061 mg/L / 0.60 (0.56-0.65) mg/L / 0.62 (0.61-0.63) mg/L / 0.90 (0.87-0.93) mg/L / 1.4 mg/L / 3.4 (3.0-3.9) mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (3.4 (3.0-3.9) mg/L)	Mortality	High	1359218
85-68-7	96 Hour(s), (96 Hour(s))	<i>Farfantepenaeus duorarum</i> (Northern Pink Shrimp), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHRIMP SUPPLIER IN FLORIDA)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.061 mg/L / <0.061 mg/L / 0.60 (0.56-0.65) mg/L / 0.62 (0.61-0.63) mg/L / 0.90 (0.87-0.93) mg/L / 1.4 mg/L / 3.4 (3.0-3.9) mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NOEC (3.4 (3.0-3.9) mg/L)	Mortality	High	1359218

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Farfantepenaeus duorarum</i> (Northern Pink Shrimp), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHRIMP SUPPLIER IN FLORIDA)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.061 mg/L / <0.061 mg/L / 0.60 (0.56-0.65) mg/L / 0.62 (0.61-0.63) mg/L / 0.90 (0.87-0.93) mg/L / 1.4 mg/L / 3.4 (3.0-3.9) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>3.4 mg/L)	Mortality	High	1359218
85-68-7	24 Hour(s), (96 Hour(s))	<i>Hexagenia</i> <td>Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported</td> <td>Measured</td> <td>0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L</td> <td>Mortality (Mortality- Mortality, Response Site: Not reported)</td> <td>NR-ZERO (0.77 mg/L)</td> <td>Mortality</td> <td>Medium</td> <td>1359195</td>	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.77 mg/L)	Mortality	Medium	1359195
85-68-7	1 Day(s), (96 Hour(s))	<i>Hexagenia</i> <td>Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported</td> <td>Measured</td> <td>0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L</td> <td>Mortality (Mortality- Mortality, Response Site: Not reported)</td> <td>LC50 (>1.6 mg/L)</td> <td>Mortality</td> <td>Medium</td> <td>1359195</td>	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Medium	1359195
85-68-7	2 Day(s), (96 Hour(s))	<i>Hexagenia</i> <td>Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported</td> <td>Measured</td> <td>0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L</td> <td>Mortality (Mortality- Mortality, Response Site: Not reported)</td> <td>LC50 (>1.6 mg/L)</td> <td>Mortality</td> <td>Medium</td> <td>1359195</td>	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Medium	1359195
85-68-7	3 Day(s), (96 Hour(s))	<i>Hexagenia</i> <td>Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported</td> <td>Measured</td> <td>0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L</td> <td>Mortality (Mortality- Mortality, Response Site: Not reported)</td> <td>LC50 (>1.6 mg/L)</td> <td>Mortality</td> <td>Medium</td> <td>1359195</td>	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.6 mg/L)	Mortality	Medium	1359195

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hexagenia</i> sp. (Mayfly), Nymph, Not Reported, Laboratory (ROHDES LIVE BAIT, AMHERST, WISCONSIN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.03 mg/L / 0.3 mg/L / 3.0 mg/L	Behavior (Behavior-Behavioral changes, general, Response Site: Not reported)	NR (0.03-3.0 mg/L)	Behavioral	Medium	1359195
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hexagenia</i> sp. (Mayfly), Nymph, Not Reported, Laboratory (ROHDES LIVE BAIT, AMHERST, WISCONSIN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.03 mg/L / 0.3 mg/L / 3.0 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR (0.03-3.0 mg/L)	Mortality	Medium	1359195
85-68-7	4 Day(s), (96 Hour(s))	<i>Hexagenia</i> sp. (Mayfly), Nymph, Not Reported, Laboratory (ROHDES LIVE BAIT, AMHERST, WISCONSIN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	LC50 (1.1 mg/L)	Mortality	Medium	1359195
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Hexagenia</i> sp. (Mayfly), Nymph, Not Reported, Laboratory (ROHDES LIVE BAIT, AMHERST, WISCONSIN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0 mg/L / 0.082 mg/L / 0.18 mg/L / 0.32 mg/L / 0.77 mg/L / 1.6 mg/L	Behavior (Behavior-Equilibrium, Response Site: Not reported)	NR (0.082-1.6 mg/L)	Behavioral	Medium	1359195
85-68-7	10 Day(s), (10 Day(s))	<i>Hyalella azteca</i> (Scud), 7-14 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.036 mg/L / 0.095 mg/L / 0.215 mg/L / 0.565 mg/L / 1.25 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-LETH (1.25 mg/L)	Mortality	High	679312

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Day(s), (10 Day(s))	<i>Hyalella azteca</i> (Scud), 7-14 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.036 mg/L / 0.095 mg/L / 0.215 mg/L / 0.565 mg/L / 1.25 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.46 (0.35- 0.60) mg/L)	Mortality	High	679312
85-68-7	NA Not applicable, (Not Reported)	<i>Hyalella azteca</i> (Scud), Not reported, Not Reported, Not reported (NR)	Not reported, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	Not Reported	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.46 mg/L)	Mortality	Uninformative	6574639
85-68-7	10 Day(s), (10 Day(s))	<i>Hyalella azteca</i> (Scud), Neonate, 7-14 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.008 mg/L / 0.036 (0.012- 0.076) mg/L / 0.095 (0.046- 0.196) mg/L / 0.215 (0.123- 0.351) mg/L / 0.565 (0.324- 0.794) mg/L / 1.25 (0.96- 1.47) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.48 (0.30- 0.67) mg/L)	Mortality	High	7325945
85-68-7	10 Day(s), (10 Day(s))	<i>Hyalella azteca</i> (Scud), Neonate, 7-14 Day(s), Not Reported, Laboratory (CULTURES STARTED AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY LABORATORY, DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.008 mg/L / 0.036 (0.012- 0.076) mg/L / 0.095 (0.046- 0.196) mg/L / 0.215 (0.123- 0.351) mg/L / 0.565 (0.324- 0.794) mg/L / 1.25 (0.96- 1.47) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (0.71 (0.68- 0.74) mg/L)	Mortality	High	7325945

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Histology-Necrosis, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Physiology (Immunological-Pseudopodia formation, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Biochemical (Enzyme(s)-Phenoloxidase, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Genetics-Apoptosis, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Physiology (Physiology-Superoxide generation, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	40 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Histology-Necrosis, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Cell(s)-Aggregation/adhesion, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	40 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Genetics-Apoptosis, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Histology-Necrosis, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	40 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Genetics-Apoptosis, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Biochemical (Enzyme(s)-Phenoloxidase, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Genetics-Apoptosis, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598

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CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Physiology (Physiology-Superoxide generation, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	40 Minute(s), (40 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Histology-Necrosis, Response Site: Hemocyte)	LOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Physiology (Immunological-Pseudopodia formation, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	10 Minute(s), (10 Minute(s))	<i>Macrobrachium rosenbergii</i> (Giant River Prawn), Not intact, Not Reported, Laboratory (LOCAL PRAWN FARM)	Culture, In Vitro, In Vitro, Not Reported	Unmeasured	0 ug/ml / 100 ug/ml	Cellular (Cell(s)-Aggregation/adhesion, Response Site: Hemocyte)	NOEC (100 ug/ml)	Mechanistic: Cell signaling/function	Medium	789598
85-68-7	0-2 Generation, (2 Generation)	<i>Moina macrocopa</i> (Water Flea), Neonate, <12 Hour(s), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Mortality (Mortality-Survivorship, Response Site: Not reported)	NR (62.5-2000 ug/L)	Mortality	High	788149

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	1 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F0 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F0 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Reproduction (Reproduction-Net Reproductive Rate, Response Site: Not reported)	NOEC (62.5 ug/L)	Reproductive/Teratogenic	High	788149
85-68-7	2 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F1 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Reproduction (Reproduction-Net Reproductive Rate, Response Site: Not reported)	NOEC (2000 ug/L)	Reproductive/Teratogenic	High	788149
85-68-7	1 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F0 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F0 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Reproduction (Reproduction-Net Reproductive Rate, Response Site: Not reported)	LOEC (125 ug/L)	Reproductive/Teratogenic	High	788149

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	2 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F1 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Mortality (Mortality-Life expectancy, Response Site: Not reported)	NOEC (2000 ug/L)	Mortality	High	788149
85-68-7	2 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F1 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Population (Population-Generation time, Response Site: Not reported)	NOEC (2000 ug/L)	Development/Growth	High	788149
85-68-7	1 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F0 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F0 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Mortality (Mortality-Life expectancy, Response Site: Not reported)	NR (62.5-2000 ug/L)	Mortality	High	788149

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	0-2 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NR (62.5-2000 ug/L)	Reproductive/Teratogenic	High	788149
85-68-7	1 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F0 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA F0 generation	Unmeasured	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Population (Population-Intrinsic rate of increase, Response Site: Not reported)	NR (62.5-2000 ug/L)	Reproductive/Teratogenic	High	788149
85-68-7	1 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F0 generation), Not Reported, Laboratory (FROM LAB-ORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA F0 generation	Unmeasured	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Population (Population-Generation time, Response Site: Not reported)	NR (62.5-2000 ug/L)	Development/Growth	High	788149

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	2 Generation, (2 Generation)	<i>Moina macro-copa</i> (Water Flea), Neonate, <12 Hour(s) (Measured in: F1 generation), Not Reported, Laboratory (FROM LABORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Renewal, NA	Unmeasured F1 generation	0 ug/L / 0 ug/L / 62.5 ug/L / 125 ug/L / 250 ug/L / 500 ug/L / 1000 ug/L / 2000 ug/L	Population (Population-Intrinsic rate of increase, Response Site: Not reported)	NR (62.5-2000 ug/L)	Reproductive/Teratogenic	High	788149
85-68-7	48 Hour(s), (48 Hour(s))	<i>Moina macro-copa</i> (Water Flea), Newborn, <12 Hour(s), Not Reported, Laboratory (FROM LABORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.25 mg/L / 0.50 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 6.0 mg/L / 8.0 mg/L / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (2.0 mg/L)	Mortality	High	788149
85-68-7	48 Hour(s), (48 Hour(s))	<i>Moina macro-copa</i> (Water Flea), Newborn, <12 Hour(s), Not Reported, Laboratory (FROM LABORATORY OF AQUACULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.25 mg/L / 0.50 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 6.0 mg/L / 8.0 mg/L / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (4.0 mg/L)	Mortality	High	788149

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Moina macro-copa</i> (Water Flea), Newborn, <12 Hour(s), Not Reported, Laboratory (FROM LABORATORY OF AQUA-CULTURE BIOLOGY, NAGASAKI UNIVERSITY, JAPAN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.25 mg/L / 0.50 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 6.0 mg/L / 8.0 mg/L / 10 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (3.69 mg/L)	Mortality	High	788149
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytarsus dissimilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>3.60 mg/L)	Mortality	Medium	1359238
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytarsus dissimilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LD10 (2.33 mg/L)	Mortality	Medium	1359238

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytar-sus dissim-ilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LD99 (11.00 mg/L)	Mortality	Medium	1359238
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytar-sus dissim-ilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LD75 (7.03 mg/L)	Mortality	Medium	1359238
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytar-sus dissim-ilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LD50 (5.41 (3.895- 13.42) mg/L)	Mortality	Medium	1359238

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytar-sus dissim-ilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LD90 (8.49 mg/L)	Mortality	Medium	1359238
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytar-sus dissim-ilis</i> (Midge), Larva, 2-3 Instar, Not Reported, Laboratory (ORIGINALLY OBTAINED FROM THE EPA AQUATIC TOXICOLOGY LABORATORY IN DULUTH, MN)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	0 mg/L / 0 mg/L / 0.04 mg/L / 0.20 mg/L / 0.36 mg/L / 2.00 mg/L / 3.60 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LD25 (3.79 mg/L)	Mortality	Medium	1359238
85-68-7	96 Hour(s), (96 Hour(s))	<i>Paratanytar-sus parthenogeneti-cus</i> (Midge), 2-3 Instar, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (0.39 mg/L)	Mortality	High	1321996
85-68-7	96 Hour(s), (96 Hour(s))	<i>Paratanytar-sus parthenogeneti-cus</i> (Midge), 2-3 Instar, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>3.60 mg/L)	Mortality	High	1321996

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (48 Hour(s))	<i>Paratanytarsus parthenogeneticus</i> (Midge), Larva, Not Reported, Laboratory (MIC AQUATIC LAB-ORATORY, MIS-SOURI)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 8.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>8.0 mg/L)	Mortality	High	1359274
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytarsus parthenogeneticus</i> (Midge), Larva, Not Reported, Laboratory (MIC AQUATIC LAB-ORATORY, MIS-SOURI)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 8.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (4.0 mg/L)	Mortality	High	1359274
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytarsus parthenogeneticus</i> (Midge), Larva, Not Reported, Laboratory (MIC AQUATIC LAB-ORATORY, MIS-SOURI)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 8.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LOEC (8.0 mg/L)	Mortality	High	1359274
85-68-7	48 Hour(s), (48 Hour(s))	<i>Paratanytarsus parthenogeneticus</i> (Midge), Larva, Not Reported, Laboratory (MIC AQUATIC LAB-ORATORY, MIS-SOURI)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1.0 mg/L / 2.0 mg/L / 4.0 mg/L / 8.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (7.2 (5.8- 11.7) mg/L)	Mortality	High	1359274
85-68-7	24 Hour(s), (96 Hour(s))	<i>Procambarus</i> sp. (Crayfish), Not reported, Not Reported, Laboratory (FROM SABINE DELTA FARMS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.005 ppm / 0.12 ppm / 0.25 ppm / 0.55 ppm / 1.1 ppm / 2.4 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>2.4 mg/L)	Mortality	High	5497664

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Aquatic: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Procambarus sp.</i> (Crayfish), Not reported, Not Reported, Laboratory (FROM SABINE DELTA FARMS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.005 ppm / 0.12 ppm / 0.25 ppm / 0.55 ppm / 1.1 ppm / 2.4 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>2.4 mg/L)	Mortality	High	5497664
85-68-7	72 Hour(s), (96 Hour(s))	<i>Procambarus sp.</i> (Crayfish), Not reported, Not Reported, Laboratory (FROM SABINE DELTA FARMS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.005 ppm / 0.12 ppm / 0.25 ppm / 0.55 ppm / 1.1 ppm / 2.4 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>2.4 mg/L)	Mortality	High	5497664
85-68-7	96 Hour(s), (96 Hour(s))	<i>Procambarus sp.</i> (Crayfish), Not reported, Not Reported, Laboratory (FROM SABINE DELTA FARMS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Unmeasured	0 mg/L / 0.19 mg/L / 1.5 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (3.0 mg/L)	Mortality	High	5497664
85-68-7	96 Hour(s), (96 Hour(s))	<i>Procambarus sp.</i> (Crayfish), Not reported, Not Reported, Laboratory (FROM SABINE DELTA FARMS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.005 ppm / 0.12 ppm / 0.25 ppm / 0.55 ppm / 1.1 ppm / 2.4 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>2.4 mg/L)	Mortality	High	5497664
85-68-7	96 Hour(s), (96 Hour(s))	<i>Procambarus sp.</i> (Crayfish), Not reported, Not Reported, Laboratory (FROM SABINE DELTA FARMS)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.005 ppm / 0.12 ppm / 0.25 ppm / 0.55 ppm / 1.1 ppm / 2.4 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (2.4 ppm)	Mortality	High	5497664

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Aquatic: Worms Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	10 Day(s), (10 Day(s))	<i>Lumbriculus variegatus</i> (Oligochaete, Worm), Adult, Not Reported, Laboratory (CULTURES STARTED AT THE STANFORD RESEARCH INSTITUTE, MENLO PARK, CA)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.079 mg/L / 0.150 mg/L / 0.288 mg/L / 0.672 mg/L / 1.39 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.23 mg/L)	Mortality	High	679312
85-68-7	10 Day(s), (10 Day(s))	<i>Lumbriculus variegatus</i> (Oligochaete, Worm), Adult, Not Reported, Laboratory (CULTURES STARTED AT THE STANFORD RESEARCH INSTITUTE, MENLO PARK, CA)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.008 mg/L / 0.079 mg/L / 0.150 mg/L / 0.288 mg/L / 0.672 mg/L / 1.39 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (0.672 mg/L)	Mortality	High	679312
85-68-7	10 Day(s), (10 Day(s))	<i>Lumbriculus variegatus</i> (Oligochaete, Worm), Adult, Not Reported, Laboratory (CULTURES STARTED AT THE STANFORD RESEARCH INSTITUTE, MENLO PARK, CA)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.008 mg/L / 0.079 (0.057- 0.106) mg/L / 0.150 (0.084- 0.208) mg/L / 0.288 (0.220- 0.346) mg/L / 0.672 (0.512- 0.892) mg/L / 1.39 (1.11- 1.68) mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (1.27 mg/L)	Mortality	High	7325945

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Aquatic: Worms Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Nereis virens</i> (Polychaete Worm), Not reported, Not Reported, Laboratory (COMMERCIAL SUPPLIER IN MAINE)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.061 mg/L / <0.061 mg/L / 0.31 mg/L / 0.53 mg/L / 0.72 mg/L / 1.7 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>3.0 mg/L)	Mortality	High	6574648
85-68-7	96 Hour(s), (96 Hour(s))	<i>Nereis virens</i> (Polychaete Worm), Not reported, Not Reported, Laboratory (COMMERCIAL SUPPLIER IN MAINE)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.061 mg/L / <0.061 mg/L / 0.31 mg/L / 0.53 mg/L / 0.72 mg/L / 1.7 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEC (3.0 mg/L)	Mortality	High	6574648
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Nereis virens</i> (Polychaete Worm), Not reported, Not Reported, Laboratory (COMMERCIAL SUPPLIER IN MAINE)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.061 mg/L / <0.061 mg/L / 0.31 mg/L / 0.53 mg/L / 0.72 mg/L / 1.7 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR (0.31-3.0 mg/L)	Mortality	High	6574648

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Aquatic: Mollusks Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.068 mg/L / <0.068 mg/L / 0.19 (0.16-0.20) mg/L / 0.23 (0.11-0.28) mg/L / 0.38 (0.30-0.47) mg/L / 0.87 (0.71-1.0) mg/L / 1.4 (1.3-1.4) mg/L	Growth (Morphology-Shell deposition, Response Site: Shell)	NR (0.16-1.4 mg/L)	Development/Growth	High	6574644
85-68-7	96 Hour(s), (96 Hour(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.068 mg/L / <0.068 mg/L / 0.19 (0.16-0.20) mg/L / 0.23 (0.11-0.28) mg/L / 0.38 (0.30-0.47) mg/L / 0.87 (0.71-1.0) mg/L / 1.4 (1.3-1.4) mg/L	Growth (Morphology-Shell deposition, Response Site: Shell)	EC50 (1.3 (1.1-1.7) mg/L)	Development/Growth	High	6574644
85-68-7	1 Hour(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651

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Aquatic: Mollusks Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	6 Hour(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651
85-68-7	1 Day(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651
85-68-7	2 Day(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651

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Aquatic: Mollusks Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	3 Day(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651
85-68-7	5 Day(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651
85-68-7	7 Day(s), (53 Day(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Not reported, Not Reported, Laboratory (OB-TAINED FROM A COMMERCIAL SHELL-FISH HATCHERY ON CAPE COD, MASSACHUSETTS)	Salt water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	0 mg/L / 0.012 mg/L	Accumulation (Accumulation-Residue, Response Site: Not reported)	BCF (0.012 mg/L)	ADME (biotransformation)	High	6574651

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Aquatic: Mollusks Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (48 Hour(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Embryo, <=2 Hours post hatch, Not Reported, Laboratory (LAB NOT SPECIFIED)	Salt water, Aqueous (aquatic habitat), Static, NA Embryo	Unmeasured	0 mg/L / 0 mg/L / NR	Growth (Morphology-Shell deposition, Response Site: Shell)	EC50 (9.5 (9.1-10.1) mg/L)	Development/Growth	Uninformative	5923210
85-68-7	48 Hour(s), (48 Hour(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Embryo, <=2 Hours post hatch, Not Reported, Laboratory (LAB NOT SPECIFIED)	Salt water, Aqueous (aquatic habitat), Static, NA Embryo	Unmeasured	0 mg/L / 0 mg/L / NR	Growth (Morphology-Shell deposition, Response Site: Shell)	EC50 (6.9 (5-10) mg/L)	Development/Growth	Uninformative	5923210
85-68-7	48 Hour(s), (48 Hour(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Embryo, <=2 Hours post hatch, Not Reported, Laboratory (LAB NOT SPECIFIED)	Salt water, Aqueous (aquatic habitat), Static, NA Embryo	Unmeasured	0 mg/L / 0 mg/L / NR	Growth (Morphology-Shell deposition, Response Site: Shell)	EC50 (0.74 (0.718-0.76) mg/L)	Development/Growth	Uninformative	5923210
85-68-7	48 Hour(s), (48 Hour(s))	<i>Crassostrea virginica</i> (American Or Virginia Oyster), Embryo, <=2 Hours post hatch, Not Reported, Laboratory (LAB NOT SPECIFIED)	Salt water, Aqueous (aquatic habitat), Static, NA Embryo	Unmeasured	0 mg/L / 0 mg/L / NR	Growth (Morphology-Shell deposition, Response Site: Shell)	EC50 (0.017 (0.017-0.018) mg/L)	Development/Growth	Uninformative	5923210

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Aquatic: Mollusks Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	9 Hour(s), (96 Hour(s))	<i>Haliothis diversicolor</i> ssp. <i>superexta</i> (Taiwan Abalone), Embryo, Not Reported, Wild (FROM DAPENG BAY, SHEN-ZHEN, CHINA)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0.0000343 mg/L / 0.0000343 mg/L / 0.0182 mg/L / 0.192 mg/L / 0.953 mg/L / 2.453 mg/L / 3.925 mg/L / 4.868 mg/L	Growth (Development-Normal, Response Site: Not reported)	EC50 (2.65 (1.60-2.97) mg/L)	Development/Growth	Medium	697762
85-68-7	<=12 Hour(s), (96 Hour(s))	<i>Haliothis diversicolor</i> ssp. <i>superexta</i> (Taiwan Abalone), Embryo, Not Reported, Wild (FROM DAPENG BAY, SHEN-ZHEN, CHINA)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0.0000343 mg/L / 0.0000343 mg/L / 0.0182 mg/L / 0.192 mg/L / 0.953 mg/L / 2.453 mg/L / 3.925 mg/L / 4.868 mg/L	Growth (Development-Cell cleavage, Response Site: Not reported)	NOEC (4.868 mg/L)	Development/Growth	Medium	697762
85-68-7	<=12 Hour(s), (96 Hour(s))	<i>Haliothis diversicolor</i> ssp. <i>superexta</i> (Taiwan Abalone), Embryo, Not Reported, Wild (FROM DAPENG BAY, SHEN-ZHEN, CHINA)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0.0000343 mg/L / 0.0000343 mg/L / 0.0182 mg/L / 0.192 mg/L / 0.953 mg/L / 2.453 mg/L / 3.925 mg/L / 4.868 mg/L	Growth (Development-Normal, Response Site: Not reported)	NOEC (0.192 mg/L)	Development/Growth	Medium	697762
85-68-7	<=12 Hour(s), (96 Hour(s))	<i>Haliothis diversicolor</i> ssp. <i>superexta</i> (Taiwan Abalone), Embryo, Not Reported, Wild (FROM DAPENG BAY, SHEN-ZHEN, CHINA)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0.0000343 mg/L / 0.0000343 mg/L / 0.0182 mg/L / 0.192 mg/L / 0.953 mg/L / 2.453 mg/L / 3.925 mg/L / 4.868 mg/L	Growth (Development-Normal, Response Site: Not reported)	LOEC (0.953 mg/L)	Development/Growth	Medium	697762

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Aquatic: Mollusks Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	<=96 Hour(s), (96 Hour(s))	<i>Haliothis diversicolor</i> ssp. <i>superior</i> (<i>superior</i> (Taiwan Abalone), Embryo, Not Reported, Wild (FROM DAPENG BAY, SHEN-ZHEN, CHINA)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0.0000343 mg/L / 0.0000343 mg/L / 0.0182 mg/L / 0.192 mg/L / 0.953 mg/L / 2.453 mg/L / 3.925 mg/L / 4.868 mg/L	Growth (Development-Normal, Response Site: Not reported)	NOEC (2.453 mg/L)	Development/Growth	Medium	697762
85-68-7	<=96 Hour(s), (96 Hour(s))	<i>Haliothis diversicolor</i> ssp. <i>superior</i> (<i>superior</i> (Taiwan Abalone), Embryo, Not Reported, Wild (FROM DAPENG BAY, SHEN-ZHEN, CHINA)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0.0000343 mg/L / 0.0000343 mg/L / 0.0182 mg/L / 0.192 mg/L / 0.953 mg/L / 2.453 mg/L / 3.925 mg/L / 4.868 mg/L	Growth (Development-Metamorphosis, Response Site: Not reported)	NOEC (0.0182 mg/L)	Development/Growth	Medium	697762

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24-48 Hour(s), (72 Hour(s))	<i>Chlorella vulgaris</i> (Green Algae), Not reported, Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY COMPANY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Measured	<11.0 ug/L / 123-226 ug/L / 307-478 ug/L / 694-984 ug/L / 1480-2017 ug/L / 2188-2877 ug/L	Population (Population-Abundance, Response Site: Not reported)	NR (123-2877 ug/L)	Development/Growth	High	10617118
85-68-7	72 Hour(s), (72 Hour(s))	<i>Chlorella vulgaris</i> (Green Algae), Not reported, Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY COMPANY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Measured	<11.0 ug/L / 123-226 ug/L / 307-478 ug/L / 694-984 ug/L / 1480-2017 ug/L / 2188-2877 ug/L	Population (Population-Abundance, Response Site: Not reported)	EC50 (>2877 ug/L)	Development/Growth	High	10617118
85-68-7	72 Hour(s), (72 Hour(s))	<i>Chlorella vulgaris</i> (Green Algae), Not reported, Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY COMPANY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Measured	<11.0 ug/L / 123-226 ug/L / 307-478 ug/L / 694-984 ug/L / 1480-2017 ug/L / 2188-2877 ug/L	Population (Population-Specific growth rate, Response Site: Not reported)	NOEC (2188->2877 ug/L)	Development/Growth	High	10617118

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (72 Hour(s))	<i>Chlorella vulgaris</i> (Green Algae), Not reported, Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY COMPANY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Measured	<11.0 ug/L / 123-226 ug/L / 307-478 ug/L / 694-984 ug/L / 1480-2017 ug/L / 2188-2877 ug/L	Population (Population-Abundance, Response Site: Not reported)	NOEC (2188->2877 ug/L)	Development/Growth	High	10617118
85-68-7	72 Hour(s), (72 Hour(s))	<i>Chlorella vulgaris</i> (Green Algae), Not reported, Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY COMPANY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aqueous habitat), Not reported, Not Reported	Measured	<11.0 ug/L / 123-226 ug/L / 307-478 ug/L / 694-984 ug/L / 1480-2017 ug/L / 2188-2877 ug/L	Population (Population-Specific growth rate, Response Site: Not reported)	EC50 (>2877 ug/L)	Development/Growth	High	10617118

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Biomass, Response Site: Not reported)	EC25 (208.366 ug/L)	Development/Growth	High	10617116
85-68-7	24 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Biomass, Response Site: Not reported)	EC50 (373.600 (205-682) ug/L)	Development/Growth	High	10617116

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Biomass, Response Site: Not reported)	EC50 (255.006 (185-351) ug/L)	Development/Growth	High	10617116
85-68-7	24-48 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Abundance, Response Site: Not reported)	NR (<0.003-2140 ug/L)	Development/Growth	High	10617116

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Biomass, Response Site: Not reported)	EC25 (146.048 ug/L)	Development/Growth	High	10617116
85-68-7	72 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Biomass, Response Site: Not reported)	EC25 (198.039 ug/L)	Development/Growth	High	10617116

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Biomass, Response Site: Not reported)	EC50 (325.286 (279-379) ug/L)	Development/Growth	High	10617116
85-68-7	72 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Abundance, Response Site: Not reported)	LOEC (<0.003-485 ug/L)	Development/Growth	High	10617116

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (72 Hour(s))	<i>Desmodesmus subspicatus</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM UNIVERSITY OF TEXAS CULTURE COLLECTIONS, AUSTIN, TEXAS, USA)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.003 ug/L / <0.003-62.4 ug/L / <0.003-122 ug/L / <0.003-263 ug/L / <0.003-485 ug/L / <0.003-1120 ug/L / <0.003-2140 ug/L	Population (Population-Abundance, Response Site: Not reported)	NOEC (<0.003-263 ug/L)	Development/Growth	High	10617116
85-68-7	48 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	<0.004 ug/L / 25.7-63.7 ug/L / 61.1-137 ug/L / 153-303 ug/L / 328-591 ug/L / 830-1150 ug/L / 1500-2390 ug/L / 4650 ug/L	Population (Population-Abundance, Response Site: Not reported)	EC25 (169.601 (20.0-1435) ug/L)	Development/Growth	High	10617117

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	<0.004 ug/L / 25.7-63.7 ug/L / 61.1-137 ug/L / 153-303 ug/L / 328-591 ug/L / 830-1150 ug/L / 1500-2390 ug/L / 4650 ug/L	Population (Population-Abundance, Response Site: Not reported)	EC50 (356.039 (82.4-1539) ug/L)	Development/Growth	High	10617117
85-68-7	72 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	<0.004 ug/L / 25.7-63.7 ug/L / 61.1-137 ug/L / 153-303 ug/L / 328-591 ug/L / 830-1150 ug/L / 1500-2390 ug/L / 4650 ug/L	Population (Population-Abundance, Response Site: Not reported)	EC25 (265.343 (94.1-748) ug/L)	Development/Growth	High	10617117

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	<0.004 ug/L / 25.7-63.7 ug/L / 61.1-137 ug/L / 153-303 ug/L / 328-591 ug/L / 830-1150 ug/L / 1500-2390 ug/L / 4650 ug/L	Population (Population-Abundance, Response Site: Not reported)	EC50 (413.814 (201-853) ug/L)	Development/Growth	High	10617117
85-68-7	72 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	<0.004 ug/L / 25.7-63.7 ug/L / 61.1-137 ug/L / 153-303 ug/L / 328-591 ug/L / 830-1150 ug/L / 1500-2390 ug/L / 4650 ug/L	Population (Population-Abundance, Response Site: Not reported)	LOEC (61.1-137 ug/L)	Development/Growth	High	10617117

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	<0.004 ug/L / 25.7-63.7 ug/L / 61.1-137 ug/L / 153-303 ug/L / 328-591 ug/L / 830-1150 ug/L / 1500-2390 ug/L / 4650 ug/L	Population (Population-Abundance, Response Site: Not reported)	NOEC (25.7-63.7 ug/L)	Development/Growth	High	10617117
85-68-7	72 Hour(s), (72 Hour(s))	<i>Fistulifera pelliculosa</i> (Diatom), Exponential growth phase (log), Not Reported, Laboratory (FROM LABORATORY STOCK CULTURES, ORIGINALLY FROM CAROLINA BIOLOGICAL SUPPLY, BURLINGTON, NORTH CAROLINA, USA)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 ug/L / 0.600 ug/L / 6.00 ug/L / 60.0 ug/L / 600 ug/L / 6000 ug/L	Population (Population-Abundance, Response Site: Not reported)	NR (0.600-6000 ug/L)	Development/Growth	Uninformative	10617117

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 ml/L / 0 ml/L / 10 ml/L / 30 ml/L	Biochemical (Biochemistry-Malondialdehyde, Response Site: Not reported)	LOEC (10 ml/L)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225
85-68-7	24 Hour(s), (24 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 20 mg/L	Biochemical (Biochemistry-Reactive oxygen species, Response Site: Not reported)	LOEC (20 mg/L)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225
85-68-7	48 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 ml/L / 0 ml/L / 10 ml/L / 30 ml/L	Biochemical (Biochemistry-Malondialdehyde, Response Site: Not reported)	LOEC (10 ml/L)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 ml/L / 0 ml/L / 10 ml/L / 30 ml/L	Biochemical (Biochemistry-Malondialdehyde, Response Site: Not reported)	LOEC (10 ml/L)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225
85-68-7	24-72 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 ml/L / 0 ml/L / 10 ml/L / 30 ml/L	Biochemical (Biochemistry-Hydrogen peroxide,Hydroxide content,Superoxide, Response Site: Not reported)	NR (10-30 ml/L)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 ml/L / 0 ml/L / 10 ml/L / 30 ml/L	Biochemical (Enzyme(s)-Catalase,Superoxide dismutase (SOD) enzyme activity, Response Site: Not reported)	NR (10-30 ml/L)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mL / 0 mL / 10 mL / 30 mL	Biochemical (Biochemistry-Malondialdehyde, Response Site: Not reported)	LOEC (10 mL)	Mechanistic: Oxidative stress (including redox biology); Photosynthesis	Low	3230225
85-68-7	24-96 Hour(s), (96 Hour(s))	<i>Karenia brevis</i> (Dinoflagellate), Exponential growth phase (log), Not Reported, Laboratory (INSTITUTE OF OCEANOGRAPHY, CHINESE ACADEMY OF SCIENCES)	Salt water, Aqueous (aquatic habitat), Not reported, Not Reported	Unmeasured	0 mL / 0 mL / 1 mL / 5 mL / 10 mL / 20 mL / 30 mL / 50 mL / 100 mL / 150 mL / 200 mL	Population (Population-Abundance, Response Site: Not reported)	NR (1-200 mL)	Development/Growth	Low	3230225
85-68-7	72 Hour(s), (72 Hour(s))	<i>Raphidocelis subcapitata</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Chemical analysis reported	0 mg/L / NR	Population (Population-Population growth rate, Response Site: Not reported)	EC50 (0.96 (0.65-1.33) mg/L)	Development/Growth	Uninformative	789536
85-68-7	72 Hour(s), (72 Hour(s))	<i>Raphidocelis subcapitata</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (NR)	Fresh water, Aqueous (aquatic habitat), Not reported, Not Reported	Chemical analysis reported	0 mg/L / NR	Population (Population-Population growth rate, Response Site: Not reported)	EC10 (0.57 (0.37-0.97) mg/L)	Development/Growth	Uninformative	789536
85-68-7	96 Hour(s), (96 Hour(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Population (Population-Abundance, Response Site: Not reported)	NOEC (<0.10 mg/L)	Development/Growth	High	1321996

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Not reported (NR)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Measured	NR / NR	Population (Population-Abundance, Response Site: Not reported)	EC50 (0.21 mg/L)	Development/Growth	High	1321996
85-68-7	6 Day(s), (6 Day(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Laboratory (FROM UNIVERSITY OF TEXAS AT AUSTIN, MAIN-TAINED AT SPRINGBORN BIONOMIC, INC)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Measured	<0.005-0.01 mg/L / <0.005- <0.1 mg/L / <0.005-0.1 mg/L / <0.1-0.3 mg/L / <0.1-0.5 mg/L / <0.1-1.5 mg/L / 0.20-2.4 mg/L	Population (Population-Chlorophyll, Response Site: Not reported)	EC50 (0.2 (0.2-0.3) mg/L)	Development/Growth	High	1316196
85-68-7	96 Hour(s), (96 Hour(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Laboratory (UNIVERSITY OF TEXAS STARR COLLECTION)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.075 mg/L / 0.15 mg/L / 0.3 mg/L / 0.6 mg/L / 1.2 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (1.2 mg/L)	Development/Growth	Medium	1359173
85-68-7	96 Hour(s), (96 Hour(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Laboratory (UNIVERSITY OF TEXAS STARR COLLECTION)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.075 mg/L / 0.15 mg/L / 0.3 mg/L / 0.6 mg/L / 1.2 mg/L	Population (Population- Biomass, Response Site: Not reported)	EC90 (0.83 (0.2-1.4) mg/L)	Development/Growth	Medium	1359173

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Laboratory (UNIVERSITY OF TEXAS STARR COLLECTION)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.075 mg/L / 0.15 mg/L / 0.3 mg/L / 0.6 mg/L / 1.2 mg/L	Population (Population-Biomass, Response Site: Not reported)	EC50 (0.52 (0-1.15) mg/L)	Development/Growth	Medium	1359173
85-68-7	96 Hour(s), (96 Hour(s))	<i>Selenastrum capricornutum</i> (Green Algae), Not reported, Not Reported, Laboratory (UNIVERSITY OF TEXAS STARR COLLECTION)	Culture, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.075 mg/L / 0.15 mg/L / 0.3 mg/L / 0.6 mg/L / 1.2 mg/L	Population (Population-Biomass, Response Site: Not reported)	EC10 (0.21 (0-0.85) mg/L)	Development/Growth	Medium	1359173
85-68-7	5 Day(s), (14 Day(s))	<i>Selenastrum capricornutum</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (EPA COR-VAL利S, NOW MAINTAINED BY SRI)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0 mg/L / 0 mg/L / 0.02 mg/L / 0.13 mg/L / 0.23 mg/L / 1.29 mg/L / 2.30 mg/L	Population (Population-Abundance, Response Site: Not reported)	LOEC (1.29 mg/L)	Development/Growth	Medium	1359180
85-68-7	5 Day(s), (14 Day(s))	<i>Selenastrum capricornutum</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (EPA COR-VAL利S, NOW MAINTAINED BY SRI)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0 mg/L / 0 mg/L / 0.02 mg/L / 0.13 mg/L / 0.23 mg/L / 1.29 mg/L / 2.30 mg/L	Population (Population-Abundance, Response Site: Not reported)	NOEC (0.23 mg/L)	Development/Growth	Medium	1359180

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Aquatic: Non-vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	5 Day(s), (14 Day(s))	<i>Selenastrum capricornutum</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (EPA COR-VALLIS, NOW MAINTAINED BY SRI)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0 mg/L / 0 mg/L / 0.02 mg/L / 0.13 mg/L / 0.23 mg/L / 1.29 mg/L / 2.30 mg/L	Population (Population-Abundance, Response Site: Not reported)	EC50 (0.72 mg/L)	Development/Growth	Medium	1359180
85-68-7	14 Day(s), (14 Day(s))	<i>Selenastrum capricornutum</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (EPA COR-VALLIS, NOW MAINTAINED BY SRI)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0 mg/L / 0 mg/L / 0.02 mg/L / 0.13 mg/L / 0.23 mg/L / 1.29 mg/L / 2.30 mg/L	Population (Population-Abundance, Response Site: Not reported)	LOEC (0.02 mg/L)	Development/Growth	Medium	1359180
85-68-7	14 Day(s), (14 Day(s))	<i>Selenastrum capricornutum</i> (Green Algae), Exponential growth phase (log), Not Reported, Laboratory (EPA COR-VALLIS, NOW MAINTAINED BY SRI)	Culture, Aqueous (aquatic habitat), Not reported, Not Reported	Measured	0 mg/L / 0 mg/L / 0.02 mg/L / 0.13 mg/L / 0.23 mg/L / 1.29 mg/L / 2.30 mg/L	Population (Population-Abundance, Response Site: Not reported)	EC50 (0.52 mg/L)	Development/Growth	Medium	1359180

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (24 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY, OBTAINED FROM AMIC-TIC AND MIC-TIC FEMALES TREATED FOR 60 HOURS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.5 mg/L / 1 mg/L	Reproduction (Reproduction-Reproduction, general, Response Site: Not reported)	NOEC (1 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	24 Hour(s), (24 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY, OBTAINED FROM AMIC-TIC AND MIC-TIC FEMALES TREATED FOR 60 HOURS)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.5 mg/L / 1 mg/L	Reproduction (Reproduction-Mictic ratio, Response Site: Not reported)	NOEC (1 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	48 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction-Mictic ratio, Response Site: Not reported)	NOEC (2 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	48 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Population (Population-Population growth rate, Response Site: Not reported)	LOEC (1 mg/L)	Reproductive/Teratogenic	Medium	3070931

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	48 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Population (Population- Population growth rate, Response Site: Not reported)	NOEC (0.5 mg/L)	Reproductive/Teratogenic	Medium	3070931
85-68-7	72 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Population (Population- Population growth rate, Response Site: Not reported)	LOEC (1 mg/L)	Reproductive/Teratogenic	Medium	3070931
85-68-7	72 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Mictic ratio, Response Site: Not reported)	LOEC (1 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	72 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Population (Population- Population growth rate, Response Site: Not reported)	NOEC (0.5 mg/L)	Reproductive/Teratogenic	Medium	3070931
85-68-7	72 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Mictic ratio, Response Site: Not reported)	NOEC (0.5 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Mictic ratio, Response Site: Not reported)	NOEC (1 mg/L)	Reproductive/Teratogenic	Uninformative	3070931

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Population (Population- Population growth rate, Response Site: Not reported)	NOEC (1 mg/L)	Reproductive/Teratogenic	Medium	3070931
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Pregnant, Paris or Gravid, Response Site: Not reported)	NOEC (0.5 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Mictic ratio, Response Site: Not reported)	LOEC (2 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Population (Population- Population growth rate, Response Site: Not reported)	LOEC (2 mg/L)	Reproductive/Teratogenic	Medium	3070931
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Reproduction, general, Response Site: Not reported)	LOEC (1 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction- Pregnant, Paris or Gravid, Response Site: Not reported)	LOEC (1 mg/L)	Reproductive/Teratogenic	Uninformative	3070931

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Neonate, Not Reported, Laboratory (GEORGIA INSTITUTE OF TECHNOLOGY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0 mg/L / 0.5 mg/L / 1 mg/L / 2 mg/L	Reproduction (Reproduction-Reproduction, general, Response Site: Not reported)	NOEC (0.5 mg/L)	Reproductive/Teratogenic	Uninformative	3070931
85-68-7	~24 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-LETH (5000 ug/L)	Mortality	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Population (Population-Generation time, Response Site: Not reported)	NOEC (50 ug/L)	Reproductive/Teratogenic	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Reproduction (Reproduction-Net Reproductive Rate, Response Site: Not reported)	LOEC (500 ug/L)	Reproductive/Teratogenic	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Mortality (Mortality-Life expectancy, Response Site: Not reported)	NOEC (50 ug/L)	Mortality	Medium	1336226

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Reproduction (Reproduction-Net Reproductive Rate, Response Site: Not reported)	NOEC (50 ug/L)	Reproductive/Teratogenic	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Population (Population-Intrinsic rate of increase, Response Site: Not reported)	LOEC (50 ug/L)	Reproductive/Teratogenic	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Population (Population-Generation time, Response Site: Not reported)	LOEC (500 ug/L)	Reproductive/Teratogenic	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Population (Population-Intrinsic rate of increase, Response Site: Not reported)	NOEC (5 ug/L)	Reproductive/Teratogenic	Medium	1336226
85-68-7	~144 Hour(s), (144 Hour(s))	<i>Brachionus calyciflorus</i> (Rotifer), Not reported, Not Reported, Laboratory (ORIGINALLY FROM LAKE JINGHU, CHINA)	Fresh water, Aqueous (aquatic habitat), Renewal, Not Reported	Unmeasured	0 ug/L / 0 ug/L / 0.005 ug/L / 0.05 ug/L / 0.5 ug/L / 5 ug/L / 50 ug/L / 500 ug/L / 5000 ug/L	Mortality (Mortality-Life expectancy, Response Site: Not reported)	LOEC (500 ug/L)	Mortality	Medium	1336226

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.92->3.68 ppm)	Mortality	High	1359223
85-68-7	24 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Physiology (Injury-Injury, general, Response Site: Tentacles)	EC50 (>1.92->3.68 ppm)	Development/Growth	High	1359223
85-68-7	48 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.92->3.68 ppm)	Mortality	High	1359223
85-68-7	48 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Physiology (Injury-Injury, general, Response Site: Tentacles)	EC50 (>1.92->3.68 ppm)	Development/Growth	High	1359223

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	72 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Chemical analysis reported	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Physiology (Injury-Injury, general, Response Site: Tentacles)	EC50 (1.4 (1.0-2.0) ppm)	Development/Growth	High	1359223
85-68-7	72 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.92- >3.68 ppm)	Mortality	High	1359223
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Static, Not Reported	Unmeasured	0 mg/L / 0.03 mg/L / 0.3 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (3.0 mg/L)	Mortality	High	1359223
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra), Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Mortality (Mortality- Mortality, Response Site: Not reported)	LC50 (>1.92- >3.68 ppm)	Mortality	High	1359223

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Aquatic: Other Invertebrates Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra, Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY))	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (0.850-1.03 ppm)	Mortality	High	1359223
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra, Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY))	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Chemical analysis reported	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Physiology (Injury-Injury, general, Response Site: Tentacles)	EC50 (1.1 (0.5-2.0) ppm)	Development/Growth	High	1359223
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra, Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY))	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Physiology (Injury-Injury, general, Response Site: Tentacles)	NOEC (0.447-0.460 ppm)	Development/Growth	High	1359223
85-68-7	96 Hour(s), (96 Hour(s))	<i>Hydra littoralis</i> (Hydra, Not reported, Not Reported, Laboratory (CAROLINA BIOLOGICAL SUPPLY))	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.00844 ppm / <0.00844 ppm / 0.101-0.115 ppm / 0.189-0.232 ppm / 0.447-0.460 ppm / 0.850-1.03 ppm / 1.92-3.68 ppm	Physiology (Injury-Injury, general, Response Site: Tentacles)	LOEC (0.850-1.03 ppm)	Development/Growth	High	1359223

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	1 Day(s), (4 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-LETH (3.0 mg/L)	Mortality	Medium	10063055
85-68-7	4 Day(s), (4 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	LC0 (0.1 mg/L)	Mortality	Medium	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	1-4 Day(s), (4 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Mortality (Mortality-Survival, Response Site: Not reported)	NR (1.0 mg/L)	Mortality	Medium	10063055
85-68-7	4 Day(s), (4 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Mortality (Mortality-Mortality, Response Site: Not reported)	NR-ZERO (0.1 mg/L)	Mortality	Medium	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	>0-4 Day(s), (4 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Unmeasured	0 mg/L / 0.001 mg/L / 0.01 mg/L / 0.1 mg/L / 1.0 mg/L / 3.0 mg/L	Behavior (Behavior-No response, Response Site: Not reported)	NR (0.001-3.0 mg/L)	Behavioral	Medium	10063055
85-68-7	7 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Morphology-Length, Response Site: Hindlimb)	NOEC (94.5-114 ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	7 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Morphology- Ratio, Response Site: Hindlimb)	NOEC (94.5-114 ug/L)	Development/Growth	High	10063055
85-68-7	7 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth- Snout-vent length, Response Site: Whole organism)	NOEC (94.5-114 ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	7 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth-Weight, Response Site: Whole organism)	NOEC (26.5-40.1 ug/L)	Development/Growth	High	10063055
85-68-7	7 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (94.5-114 ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Behavior (Behavior-Equilibrium, Movements, number of, Swimming, Response Site: Not reported)	NR (1.76-118 ug/L)	Behavioral	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 11 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Cellular (Histology-Hypertrophy, Response Site: Thyroid)	LOEC (105 (94.5-118) ug/L)	Endocrine	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Development-Organ/tissue formation, Response Site: Not reported)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Development-Resorption, Response Site: Not reported)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Development-Slowed, Retarded, Delayed or Non-development, Response Site: Not reported)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 60 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Development-Slowed, Retarded, Delayed or Non-development, Response Site: Not reported)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 10-12 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth-Snout-vent length, Response Site: Whole organism)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3-5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth-Snout-vent length, Response Site: Whole organism)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 10-12 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 3-5 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Growth-Weight, Response Site: Whole organism)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 15 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Morphology- Length, Response Site: Hindlimb)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 60 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (105 (94.5-118) ug/L)	Mortality	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 11 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Cellular (Histology-Fuse, fused, Response Site: Thyroid)	NOEC (105 (94.5-118) ug/L)	Endocrine	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 11 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Cellular (Histology-Hyperplasia, Response Site: Thyroid)	NOEC (105 (94.5-118) ug/L)	Endocrine	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 11 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Cellular (Histology-Hypertrophy, Response Site: Not reported)	NOEC (105 (94.5-118) ug/L)	Endocrine	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 11 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Development-Organ/tissue formation, Response Site: Not reported)	NOEC (105 (94.5-118) ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 20 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Cellular (Histology-Hypertrophy, Response Site: Thyroid)	NOEC (34.1 (26.5-51.2) ug/L)	Endocrine	High	10063055
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, Not Reported	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Morphology-Abnormal, Response Site: Spine, backbone, Whole organism)	NR (1.76-118 ug/L)	Development/Growth	High	10063055

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Aquatic: Amphibian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	Xenopus laevis (African Clawed Frog), Tadpole, 51 Nieuwkoop-faber-stage, Not Reported, Laboratory (FROM IN-HOUSE CULTURE AT FORT ENVIRONMENTAL LABORATORIES, STILLWATER, OKLAHOMA, ORIGINALLY FROM XENOPUS 1, DEXTER, MICHIGAN)	Fresh water, Aqueous (aquatic habitat), Flow-through, 15 Organism	Measured	<0.163 ug/L / 3.50 (1.76-4.56) ug/L / 11.5 (9.65-13.8) ug/L / 34.1 (26.5-51.2) ug/L / 105 (94.5-118) ug/L	Growth (Morphology- Ratio, Response Site: Hindlimb)	LOEC (3.50 (1.76-4.56) ug/L)	Development/Growth	High	10063055

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Terrestrial: Vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	21 Day(s), (21 Day(s))	<i>Brassica rapa</i> (Bird Rape), Seedling, 7-12 Days post germination, Not Reported, Not reported	Natural soil, Environmental, Fumigation, Not Reported	Measured	0 ug/m3 / 0.47 (>0.2-<0.7) ug/m3 / 5.7 (>3-<10) ug/m3	Growth (Growth-Weight, Response Site: Shoot)	NOEL (5.7 (>3-<10) ug/m3)	Development/Growth	High	675180
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Biochemical (Biochemistry-Proline, Response Site: Leaf/needle)	LOEL (100 mg/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Photosynthesis	High	807145
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Growth (Growth-Biomass, Response Site: Whole organism)	LOEL (100 mg/L)	Development/Growth	High	807145
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Biochemical (Biochemistry-Chlorophyll, Response Site: Whole organism)	NOEL (100 mg/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Photosynthesis	High	807145
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Biochemical (Biochemistry-Proline, Response Site: Leaf/needle)	NOEL (50 mg/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Photosynthesis	High	807145
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Growth (Growth-Biomass, Response Site: Whole organism)	NOEL (50 mg/L)	Development/Growth	High	807145

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Terrestrial: Vascular plants Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Growth (Growth-Biomass, Response Site: Whole organism)	NR (1-100 mg/L)	Development/Growth	High	807145
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Growth (Growth-Number of leaves, Response Site: Not reported)	NR (1-100 mg/L)	Development/Growth	High	807145
85-68-7	28 Day(s), (28 Day(s))	<i>Ipomoea aquatica</i> (Swamp Morning-glory), Seedling, 8 Day(s), Not Reported, Laboratory	Hydroponic, Environmental, Hydroponic, Not Reported	Unmeasured	0 mg/L / 1 mg/L / 10 mg/L / 30 mg/L / 50 mg/L / 100 mg/L	Cellular (Genetics-Gene expression, Response Site: Leaf/needle)	NR (100 mg/L)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Photosynthesis	High	807145
85-68-7	21 Day(s), (21 Day(s))	<i>Sinapis alba</i> (White Mustard), Seedling, 7-12 Days post germination, Not Reported, Not reported	Natural soil, Environmental, Fumigation, Not Reported	Measured	0 ug/m3 / 0.47 (>0.2-<0.7) ug/m3 / 5.7 (>3-<10) ug/m3	Growth (Growth-Weight, Response Site: Shoot)	NOEL (5.7 (>3-<10) ug/m3)	Development/Growth	High	675180
85-68-7	21 Day(s), (21 Day(s))	<i>Trifolium repens</i> (Dutch Clover), Seedling, 7-12 Days post germination, Not Reported, Not reported	Natural soil, Environmental, Fumigation, Not Reported	Measured	0 ug/m3 / 0.47 (>0.2-<0.7) ug/m3 / 5.7 (>3-<10) ug/m3	Growth (Growth-Weight, Response Site: Shoot)	NOEL (5.7 (>3-<10) ug/m3)	Development/Growth	High	675180

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LAB-ORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 19-22 male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Biochemical (Hormone(s)-Progesterone, Response Site: Testes)	LOEL (500 mg/kg bdwt/d)	Mechanistic: Cell signaling/function; Endocrine toxicity	High	689975
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LAB-ORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Growth-Weight, Response Site: Whole organism)	NR (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LAB-ORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 15-20 male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Biochemical (Hormone(s)-Testosterone, Response Site: Testes)	LOEL (500 mg/kg bdwt/d)	Mechanistic: Cell signaling/function; Endocrine toxicity	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 16-24 male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Biochemical (Hormone(s)-Testosterone, Response Site: Testes)	LOEL (500 mg/kg bdwt/d)	Mechanistic: Endocrine toxicity	High	689975
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 35-51 male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Biochemical (Hormone(s)-Testosterone, Response Site: Whole organism)	LOEL (500 mg/kg bdwt/d)	Mechanistic: Cell signaling/function; Endocrine toxicity	High	689975
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation, Female, Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 6 Female organisms	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Growth-Weight, Response Site: Whole organism)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	4 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: F1 generation), Female, Laboratory (CHARLES RIVER BREEDING LAB-ORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA	Unmeasured F1 generation	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Reproduction (Reproduction-Viability, Response Site: Not reported)	NR (500 mg/kg bdwt/d)	Reproductive/Teratogenic	High	689975
85-68-7	~9 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation, Female, Laboratory (CHARLES RIVER BREEDING LAB-ORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 6 Female organisms	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Reproduction (Reproduction-Progeny counts/numbers, Response Site: Not reported)	NOEL (500 mg/kg bdwt/d)	Reproductive/Teratogenic	High	689975
85-68-7	~9 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation, Female, Laboratory (CHARLES RIVER BREEDING LAB-ORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, 6 Female organisms	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Reproduction (Reproduction-Number of implantations, Response Site: Not reported)	NOEL (500 mg/kg bdwt/d)	Reproductive/Teratogenic	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~9 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Mortality (Mortality- Mortality, Response Site: Not reported)	NOEL (500 mg/kg bdwt/d)	Mortality	High	689975
85-68-7	~9 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology- Length, Response Site: Anogenital)	LOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~20 Day(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology- Quantity, Response Site: Nipple)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Weight, Response Site: Muscle)	LOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Physiology (Physiology-Hydrenephrosis, Response Site: Kidney)	LOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Anogenital)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Epididymis)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Seminal vesicle)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Prostate gland)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Testes)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Length, Response Site: Anogenital)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Quantity, Response Site: Nipple)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Weight, Response Site: Epididymis)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Weight, Response Site: Penis)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Weight, Response Site: Prostate gland)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Weight, Response Site: Seminal vesicle)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Weight, Response Site: Testes)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Penis)	NOEL (500 mg/kg bdwt/d)	Development/Growth	High	689975

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Terrestrial: Mammalian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	~3.2 Month(s), (~3.2 Month(s))	<i>Rattus norvegicus</i> (Norway Rat), Gestation, 14 Days gestation (Measured in: male, 1st generation), Female (Measured in: male, 1st generation), Laboratory (CHARLES RIVER BREEDING LABORATORY, RALEIGH, NC)	No substrate, Oral (diet, drink, gavage), Gavage, NA male, 1st generation	Unmeasured	0 mg/kg bdwt/d / 500 mg/kg bdwt/d	Growth (Morphology-Abnormal, Response Site: Testes)	NR (500 mg/kg bdwt/d)	Development/Growth	High	689975

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Terrestrial: Worms Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (24 Hour(s))	<i>Caenorhabditis elegans</i> (Nematode), Not reported, Not Reported, Laboratory (CAENORHAB-DITIS GENET-ICS CENTER, USA)	Culture, Environmental, Culture medium, 10 Organism	Unmeasured	0 mg/L / 0.3 mg/L / 1.0 mg/L / 3.0 mg/L / 10 mg/L / 30 mg/L / 100 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (100 mg/L)	Mortality	Medium	1249864
85-68-7	24 Hour(s), (24 Hour(s))	<i>Caenorhabditis elegans</i> (Nematode), Not reported, Not Reported, Laboratory (CAENORHAB-DITIS GENET-ICS CENTER, USA)	Culture, Environmental, Culture medium, 10 Organism	Measured	0.090 mg/L / 0.14 mg/L / 0.38 mg/L / 0.80 mg/L / 1.50 mg/L	Mortality (Mortality- Mortality, Response Site: Not reported)	NR-ZERO (1.50 mg/L)	Mortality	Medium	1249864
85-68-7	24 Hour(s), (24 Hour(s))	<i>Caenorhabditis elegans</i> (Nematode), Not reported, Not Reported, Laboratory (CAENORHAB-DITIS GENET-ICS CENTER, USA)	Culture, Environmental, Culture medium, 10 Organism	Unmeasured	0 mg/L / 0.3 mg/L / 1.0 mg/L / 3.0 mg/L / 10 mg/L / 30 mg/L / 100 mg/L	Behavior (Behavior- Behavioral changes, general, Response Site: Not reported)	NR (0.3-100 mg/L)	Behavioral	Medium	1249864
85-68-7	24 Hour(s), (24 Hour(s))	<i>Caenorhabditis elegans</i> (Nematode), Not reported, Not Reported, Laboratory (CAENORHAB-DITIS GENET-ICS CENTER, USA)	Culture, Environmental, Culture medium, 10 Organism	Measured	0.090 mg/L / 0.14 mg/L / 0.38 mg/L / 0.80 mg/L / 1.50 mg/L	Behavior (Behavior- Behavioral changes, general, Response Site: Not reported)	NR (0.090-1.50 mg/L)	Behavioral	Medium	1249864

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Terrestrial: Worms Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	24 Hour(s), (24 Hour(s))	<i>Caenorhabditis elegans</i> (Nematode), Larva (Measured in: Adult), Not Reported, Laboratory (NR)	Culture, Environmental, Culture medium, >5000 Adult	Unmeasured	0 uM / 100 uM	Cellular (Genetics-Nondisjunction, Response Site: Not reported)	LOEL (100 uM)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Genotox (including DNA repair)	Medium	5043459

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Terrestrial: Avian Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	42 Day(s), (42 Day(s))	<i>Gallus gallus</i> (Chicken), 18 Month(s), Female, Laboratory	No substrate, Oral (diet, drink, gavage), Diet, unspecified, Not Reported	Unmeasured	0 g/kg bdwt / 5 g/kg bdwt	Reproduction (Reproduction-Fecundity, Response Site: Not reported)	NR (5 g/kg bdwt)	Reproductive/Teratogenic	Low	1359174
85-68-7	42 Day(s), (42 Day(s))	<i>Gallus gallus</i> (Chicken), 18 Month(s), Female, Laboratory	No substrate, Oral (diet, drink, gavage), Diet, unspecified, Not Reported	Unmeasured	0 g/kg bdwt / 5 g/kg bdwt	Cellular (Histology-Degeneration, Inflammation, Vacuolization, Response Site: Axons, Nervous tissue)	NR (5 g/kg bdwt)	Neurological	Low	1359174
85-68-7	42 Day(s), (42 Day(s))	<i>Gallus gallus</i> (Chicken), 18 Month(s), Female, Laboratory	No substrate, Oral (diet, drink, gavage), Diet, unspecified, Not Reported	Unmeasured	0 g/kg bdwt / 5 g/kg bdwt	Cellular (Histology-Histological changes, general, Response Site: Not reported)	NR (5 g/kg bdwt)	Neurological	Low	1359174

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Terrestrial: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	1-7 Day(s), (7 Day(s))	<i>Lasius niger</i> (Black Garden Ant), Not reported, Female, Wild (COLLECTED FROM AN ORCHARD NEAR TOURS, AZAY SUR CHEY, FRANCE, IN JUNE 2011 AND 2012)	No substrate, Topical, Topical, general, Not Reported	Unmeasured	0 ng/ul / 2 ng/ul	Cellular (Genetics-16S ribosomal RNA, Defensin 1 mRNA, Histone H2A mRNA, Peptidoglycan recognition protein mRNA, Superoxide dismutase 1 mRNA, Vitellogenin mRNA, Response Site: Abdomen, Ovaries, Whole organism)	NR (2 ng/ul)	Mechanistic: Biomarkers (exposure and effect); Cell signaling/function; Epigenetics	Medium	2345940
85-68-7	0 Day(s), (5 Day(s))	<i>Lasius niger</i> (Black Garden Ant), Not reported, Not Reported, Wild (COLLECTED FROM A PERSONAL OR-CHARD NEAR TOURS, A. LENOIR, AZAY SUR CHER, FRANCE)	No substrate, Environmental, Direct application, Not Reported	Unmeasured	0 ng/ul / 2000 ng/ul	Accumulation (Accumulation-Residue, Response Site: Cuticle)	LOEL (2000 ng/ul)	ADME (biotransformation)	Medium	2347468
85-68-7	1 Day(s), (5 Day(s))	<i>Lasius niger</i> (Black Garden Ant), Not reported, Not Reported, Wild (COLLECTED FROM A PERSONAL OR-CHARD NEAR TOURS, A. LENOIR, AZAY SUR CHER, FRANCE)	No substrate, Environmental, Direct application, Not Reported	Unmeasured	0 ng/ul / 2000 ng/ul	Accumulation (Accumulation-Residue, Response Site: Cuticle)	NOEL (2000 ng/ul)	ADME (biotransformation)	Medium	2347468

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Terrestrial: Arthropods Extraction Table

CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Source	Exposure Media, Route Grouping, Type, Sample Number	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Health Effect as reported by the Study Author(s)	Effect Level as reported by the Study Author(s)*	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	2 Day(s), (5 Day(s))	<i>Lasius niger</i> (Black Garden Ant), Not reported, Not Reported, Wild (COLLECTED FROM A PERSONAL OR- CHARD NEAR TOURS, A. LENOIR, AZAY SUR CHER, FRANCE)	No substrate, Environmental, Direct application, Not Reported	Unmeasured	0 ng/ul / 2000 ng/ul	Accumulation (Accumulation-Residue, Re- sponse Site: Cuti- cle)	NOEL (2000 ng/ul)	ADME (biotrans- formation)	Medium	2347468
85-68-7	3-5 Day(s), (5 Day(s))	<i>Lasius niger</i> (Black Garden Ant), Not reported, Not Reported, Wild (COLLECTED FROM A PERSONAL OR- CHARD NEAR TOURS, A. LENOIR, AZAY SUR CHER, FRANCE)	No substrate, Environmental, Direct application, Not Reported	Unmeasured	0 ng/ul / 2000 ng/ul	Accumulation (Accumulation-Residue, Re- sponse Site: Cuti- cle)	NR (2000 ng/ul)	ADME (biotrans- formation)	Medium	2347468

* If multiple extractions contained all identical information except the effect level, extraction rows were collapsed and the differing levels are listed by comma in this row.

Data Extraction of Rodent Data for the Application of Environmental Hazard										
CASRN	Exposure and Overall Duration	Test Organism Species, Age, Sex, Strain	Exposure Type	Test Analysis Exposure Parameters	Dose/ Concentration for Each Main Group of the Study	Hazard Effect/ Hazard Level	Effect Level as reported by the Study Author(s)	Health Outcome Identified by the Assessor	Overall Quality Determination	HERO ID
85-68-7	136 days, (136 days)	Rat (Rattus norvegicus), Sampling Age:Juvenile Exposure Age: AdultF, Sprague-Dawley	Diet	Unmeasured	0/120/217/446	217	NOAEL	Reproduction	High	1359183
85-68-7	136 days, (136 days)	Rat (Rattus norvegicus), Sampling Age:Juvenile Exposure Age: AdultF, Sprague-Dawley	Diet	Unmeasured	0/120/217/446	446	LOAEL	Reproduction	High	1359183

Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/ Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
The study did not report which, if any compliance guidelines were adhered to. Rat-Albino - [rat]-Female	Oral-Gavage-Duration: Short-term (>1-30 days)-1-F0 - gestation (GD 14- parturition) Pregnant rats were exposed from GD14 until parturition	POD: 4 mg/kg-bw/day (LOAEL) -Developmental n= 6 Dose= 0, n= 6 Dose= 4, n= 6 Dose= 20, Dose= 100, mg/kg-bw/dayTotal # of generations: 1 Female Exposure: F0 - gestation, GD 14- parturition	See footnotes for full summary ¹	Number of animals treated/ examined were not fully reported. Purity of test substance was not reported.	Reproductive/Developmental- PND1 (litter size, sex ratio, and number of live and dead pups), PND 4 (viability index), PND 21 (weaning index). Gross external abnormalities, development landmarks (eye opening, fur formation, pinna detachment, testis descent), AGD; PND 5 and PND 25, pup body weight, PND 75: male offspring organ weights (testes, epididymis, prostate, vas deference, and seminal vesicle, liver, kidney, and adrenal gland), sperm quality parameters (sperm motility, sperm count, testicular spermatid count, daily sperm production, and sperm head shape abnormality), 17 β -hydroxy steroid dehydrogenase levels in testis, serum testosterone levels.; Medium	Ahmad et. 2014 2219796

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
The study was GPL compliant. Rat-Fischer 344 - [rat]-Both	Oral-Diet-Duration: Short-term (>1-30 days)-7-24-21-day(s) 24 hours/day 7 days/week 21 day(s) Animals were fed diet containing test substance for 21 days	POD: 639 mg/kg-bw/day (NOAEL) -Liver weight n= 5 Dose= 0, n= 5 Dose= 639, n= 5 Dose= 1277, n= 5 Dose= 2450, mg/kg-bw/day	See footnotes for full summary ²	Purity of test substance was not reported. Food intake was significantly reduced (>20% difference from control).	Nutritional/Metabolic-Body weight and food intake-Hepatic/Liver-Liver weight and histology. Serum triglyceride and total cholesterol. Biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation and protein concentration; microsomal fraction rate of lauric acid 11-hydroxylase and 12-hydroxylase activity) and ultrastructure of liver assessing peroxisome proliferation (TEM); Uninformative	BIBRA, 1986 1325511
The study was GPL compliant. Rat-Fischer 344 - [rat]-Both	Oral-Diet-Duration: Short-term (>1-30 days)-7-24-21-day(s) 24 hours/day 7 days/week 21 day(s) Animals were fed diet containing test substance for 21 days	POD: 0 mg/kg-bw/day (LOAEL) -Increased liver weight, decreased serum triglycerides and cholesterol levels n= 5 Dose= 0, n= 5 Dose= 624, n= 5 Dose= 1234, n= 5 Dose= 2160, mg/kg-bw/day	See footnotes for full summary ³	Purity of test substance was not reported. Food intake was significantly reduced (>20% difference from control).	Nutritional/Metabolic-Body weight and food intake-Hepatic/Liver-Liver weight and histology. Serum triglyceride and total cholesterol. Biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation and protein concentration; microsomal fraction rate of lauric acid 11-hydroxylase and 12-hydroxylase activity) and ultrastructure of liver assessing peroxisome proliferation (TEM); Uninformative	BIBRA, 1986 1325511

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
The study was GPL compliant. Rat-Fischer 344 - [rat]-Both	Oral-Diet-Duration: Short-term (>1-30 days)-7-24-21-day(s) 24 hours/day 7 days/week 21 day(s) Animals were fed diet containing test substance for 21 days	POD: 304 mg/kg-bw/day (LOAEL) -Increased liver weight n= 5 Dose= 0, n= 5 Dose= 304, n= 5 Dose= 1134, n= 5 Dose= 2100, mg/kg-bw/day	See footnotes for full summary ⁴	Purity of test substance was not reported. Food intake was significantly reduced (>20% difference from control).	Nutritional/Metabolic-Body weight and food intake-Hepatic/Liver-Liver weight and histology. Serum triglyceride and total cholesterol. Biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation and protein concentration; microsomal fraction rate of lauric acid 11-hydroxylase and 12-hydroxylase activity) and ultrastructure of liver assessing peroxisome proliferation (TEM); Uninformative	BIBRA, 1986 1325511
The study was GPL compliant. Rat-Fischer 344 - [rat]-Both	Oral-Diet-Duration: Short-term (>1-30 days)-7-24-21-day(s) 24 hours/day 7 days/week 21 day(s) Animals were fed diet containing test substance for 21 days	POD: 639 mg/kg-bw/day (LOAEL) -Increased liver weight, decreased serum triglyceride and cholesterol levels n= 5 Dose= 0, n= 5 Dose= 639, n= 5 Dose= 1192, n= 5 Dose= 2195, mg/kg-bw/day	See footnotes for full summary ⁵	Purity of test substance was not reported. Food intake was significantly reduced (>20% difference from control).	Nutritional/Metabolic-Body weight and food intake-Hepatic/Liver-Liver weight and histology. Serum triglyceride and total cholesterol. Biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation and protein concentration; microsomal fraction rate of lauric acid 11-hydroxylase and 12-hydroxylase activity) and ultrastructure of liver assessing peroxisome proliferation (TEM); Uninformative	BIBRA, 1986 1325511

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
The study was GPL compliant. Rat-Fischer 344 - [rat]-Both	Oral-Diet-Duration: Short-term (>1-30 days)-7-24-21-day(s) 24 hours/day 7 days/week 21 day(s) Animals were fed diet containing test substance for 21 days	POD: 1149 mg/kg-bw/day (LOAEL) -Increased liver weight, decrease in serum triglyceride and total cholesterol, increased incidence of reduced cytoplasmic basophilia in the liver n= 40 Dose= 0, n= 40 Dose= 1149, mg/kg-bw/day	See footnotes for full summary ⁶	Purity of test substance was not reported. Food intake was significantly reduced (>20% difference from control).	Nutritional/Metabolic-Body weight and food intake-Hepatic/Liver-Liver weight and histology. Serum triglyceride and total cholesterol. Biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation and protein concentration; microsomal fraction rate of lauric acid 11-hydroxylase and 12-hydroxylase activity) and ultrastructure of liver assessing peroxisome proliferation (TEM); Uninformative	BIBRA, 1986 1325511

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
None Rat-Sprague-Dawley - [rat]- Male	nan 1 days/week 4 week(s) Animals were treated 4 weeks, although it doesn't specifically say 7 days/week.	POD: 500 mg/kg-bw/day (LOAEL) -Male reproductive effects (decreased sperm counts/motility) n= 6 Dose= 0, n= 6 Dose= 500, mg/kg-bw/day	Male SD rats (5-6/group) were exposed by oral gavage to one of multiple phthalates, including BBP, DEHP, DBP, DIDP, and DINP. It is assumed that animals were exposed one time per day, 7 days per week for 4 weeks, although it is not explicitly stated. Negative controls were exposed to corn oil (vehicle) only. Animals were monitored for clinical signs and mortality, and body weights were measured every three days. Urinalysis was collected, and following euthanasia, blood was collected for hematology and serum chemistry parameters. Organ weights and sperm quality were also analyzed. No animals died during the exposure period, and the only clinical sign observed was salivation. Body weights were decreased starting at 2 weeks of exposure in animals exposed to BBP, DBP, and DINP, but not in animals exposed to DEHP or DIDP, and no differences in food consumption were measured in any group. Increased relative liver weights were observed in animals exposed to BBP, DBP, DEHP, DIDP, and DINP, while relative testis weights were decreased and relative thymus weights were increased in animals exposed to DEHP. No other organ weight changes were observed. Animals exposed to DBP and DIDP had altered hematology parameters, while animals exposed to DEHP, DBP, DINP, and DIDP had altered serum chemistry parameters. Urinalysis results were not shown, but text stated that animals exposed to DIDP add altered results. Sperm counts and motility were decreased in animals exposed to BBP, DEHP, DBP, DIDP, and DINP. The only dose examined (500 mg/kg/day) was the LOAEL for male reproductive effects.	The major limitation of this study is the lack of reporting. Very little information is provided on the exposure methods, test substance preparation, number of animals per group, and dosing frequency. The urinalysis information was also not reported.	Reproductive/Developmental- Testis and epididymis weights, sperm count and motility;	Kwack et. 2009 697382 Medium

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
None Rat-Sprague-Dawley - [rat]- Male	nan 1 days/week 4 week(s) Animals were treated 4 weeks, although it doesn't specifically say 7 days/week.	POD: 500 mg/kg-bw/day (LOAEL) -Male reproductive effects (decreased sperm counts/motility) n= 6 Dose= 0, n= 6 Dose= 500, mg/kg-bw/day	Male SD rats (5-6/group) were exposed by oral gavage to one of multiple phthalates, including BBP, DEHP, DBP, DIDP, and DINP. It is assumed that animals were exposed one time per day, 7 days per week for 4 weeks, although it is not explicitly stated. Negative controls were exposed to corn oil (vehicle) only. Animals were monitored for clinical signs and mortality, and body weights were measured every three days. Urinalysis was collected, and following euthanasia, blood was collected for hematology and serum chemistry parameters. Organ weights and sperm quality were also analyzed. No animals died during the exposure period, and the only clinical sign observed was salivation. Body weights were decreased starting at 2 weeks of exposure in animals exposed to BBP, DBP, and DINP, but not in animals exposed to DEHP or DIDP, and no differences in food consumption were measured in any group. Increased relative liver weights were observed in animals exposed to BBP, DBP, DEHP, DIDP, and DINP, while relative testis weights were decreased and relative thymus weights were increased in animals exposed to DEHP. No other organ weight changes were observed. Animals exposed to DBP and DIDP had altered hematology parameters, while animals exposed to DEHP, DBP, DINP, and DIDP had altered serum chemistry parameters. Urinalysis results were not shown, but text stated that animals exposed to DIDP add altered results. Sperm counts and motility were decreased in animals exposed to BBP, DEHP, DBP, DIDP, and DINP. The only dose examined (500 mg/kg/day) was the LOAEL for male reproductive effects.	The major limitation of this study is the lack of reporting. Very little information is provided on the exposure methods, test substance preparation, number of animals per group, and dosing frequency. The urinalysis information was also not reported.	Reproductive/Developmental- Testis and epididymis weights, sperm count and motility;	Kwack et. 2009 697382 Medium

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
None Rat-Sprague-Dawley - [rat]- Male	nan 1 days/week 4 week(s) Animals were treated 4 weeks, although it doesn't specifically say 7 days/week.	POD: 500 mg/kg-bw/day (LOAEL) -Male reproductive effects (decreased sperm counts/motility) n= 6 Dose= 0, n= 6 Dose= 500, mg/kg-bw/day	Male SD rats (5-6/group) were exposed by oral gavage to one of multiple phthalates, including BBP, DEHP, DBP, DIDP, and DINP. It is assumed that animals were exposed one time per day, 7 days per week for 4 weeks, although it is not explicitly stated. Negative controls were exposed to corn oil (vehicle) only. Animals were monitored for clinical signs and mortality, and body weights were measured every three days. Urinalysis was collected, and following euthanasia, blood was collected for hematology and serum chemistry parameters. Organ weights and sperm quality were also analyzed. No animals died during the exposure period, and the only clinical sign observed was salivation. Body weights were decreased starting at 2 weeks of exposure in animals exposed to BBP, DBP, and DINP, but not in animals exposed to DEHP or DIDP, and no differences in food consumption were measured in any group. Increased relative liver weights were observed in animals exposed to BBP, DBP, DEHP, DIDP, and DINP, while relative testis weights were decreased and relative thymus weights were increased in animals exposed to DEHP. No other organ weight changes were observed. Animals exposed to DBP and DIDP had altered hematology parameters, while animals exposed to DEHP, DBP, DINP, and DIDP had altered serum chemistry parameters. Urinalysis results were not shown, but text stated that animals exposed to DIDP add altered results. Sperm counts and motility were decreased in animals exposed to BBP, DEHP, DBP, DIDP, and DINP. The only dose examined (500 mg/kg/day) was the LOAEL for male reproductive effects.	The major limitation of this study is the lack of reporting. Very little information is provided on the exposure methods, test substance preparation, number of animals per group, and dosing frequency. The urinalysis information was also not reported.	Reproductive/Developmental- Testis and epididymis weights, sperm count and motility;	Kwack et. 2009 697382 Medium

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
None Rat-Sprague-Dawley - [rat]- Male	nan 1 days/week 4 week(s) Animals were treated 4 weeks, although it doesn't specifically say 7 days/week.	POD: 500 mg/kg-bw/day (LOAEL) -Male reproductive effects (decreased sperm counts/motility) n= 6 Dose= 0, n= 6 Dose= 500, mg/kg-bw/day	Male SD rats (5-6/group) were exposed by oral gavage to one of multiple phthalates, including BBP, DEHP, DBP, DIDP, and DINP. It is assumed that animals were exposed one time per day, 7 days per week for 4 weeks, although it is not explicitly stated. Negative controls were exposed to corn oil (vehicle) only. Animals were monitored for clinical signs and mortality, and body weights were measured every three days. Urinalysis was collected, and following euthanasia, blood was collected for hematology and serum chemistry parameters. Organ weights and sperm quality were also analyzed. No animals died during the exposure period, and the only clinical sign observed was salivation. Body weights were decreased starting at 2 weeks of exposure in animals exposed to BBP, DBP, and DINP, but not in animals exposed to DEHP or DIDP, and no differences in food consumption were measured in any group. Increased relative liver weights were observed in animals exposed to BBP, DBP, DEHP, DIDP, and DINP, while relative testis weights were decreased and relative thymus weights were increased in animals exposed to DEHP. No other organ weight changes were observed. Animals exposed to DBP and DIDP had altered hematology parameters, while animals exposed to DEHP, DBP, DINP, and DIDP had altered serum chemistry parameters. Urinalysis results were not shown, but text stated that animals exposed to DIDP add altered results. Sperm counts and motility were decreased in animals exposed to BBP, DEHP, DBP, DIDP, and DINP. The only dose examined (500 mg/kg/day) was the LOAEL for male reproductive effects.	The major limitation of this study is the lack of reporting. Very little information is provided on the exposure methods, test substance preparation, number of animals per group, and dosing frequency. The urinalysis information was also not reported.	Reproductive/Developmental- Testis and epididymis weights, sperm count and motility;	Kwack et. 2009 697382 Medium

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
None Rat-Sprague-Dawley - [rat]- Male	nan 1 days/week 4 week(s) Animals were treated 4 weeks, although it doesn't specifically say 7 days/week.	POD: 500 mg/kg-bw/day (LOAEL) -Male reproductive effects (decreased sperm counts/motility) n= 6 Dose= 0, n= 6 Dose= 500, mg/kg-bw/day	Male SD rats (5-6/group) were exposed by oral gavage to one of multiple phthalates, including BBP, DEHP, DBP, DIDP, and DINP. It is assumed that animals were exposed one time per day, 7 days per week for 4 weeks, although it is not explicitly stated. Negative controls were exposed to corn oil (vehicle) only. Animals were monitored for clinical signs and mortality, and body weights were measured every three days. Urinalysis was collected, and following euthanasia, blood was collected for hematology and serum chemistry parameters. Organ weights and sperm quality were also analyzed. No animals died during the exposure period, and the only clinical sign observed was salivation. Body weights were decreased starting at 2 weeks of exposure in animals exposed to BBP, DBP, and DINP, but not in animals exposed to DEHP or DIDP, and no differences in food consumption were measured in any group. Increased relative liver weights were observed in animals exposed to BBP, DBP, DEHP, DIDP, and DINP, while relative testis weights were decreased and relative thymus weights were increased in animals exposed to DEHP. No other organ weight changes were observed. Animals exposed to DBP and DIDP had altered hematology parameters, while animals exposed to DEHP, DBP, DINP, and DIDP had altered serum chemistry parameters. Urinalysis results were not shown, but text stated that animals exposed to DIDP add altered results. Sperm counts and motility were decreased in animals exposed to BBP, DEHP, DBP, DIDP, and DINP. The only dose examined (500 mg/kg/day) was the LOAEL for male reproductive effects.	The major limitation of this study is the lack of reporting. Very little information is provided on the exposure methods, test substance preparation, number of animals per group, and dosing frequency. The urinalysis information was also not reported.	Reproductive/Developmental- Testis and epididymis weights, sperm count and motility;	Kwack et. 2009 697382 Medium

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
OECD protocol for detecting endocrine disruptors (OECD, 2001). Rat-Sprague-Dawley - [rat]- Male	Oral-Gavage-Duration: Short-term (>1-30 days)-7- 10-day(s) 7 days/week 10 day(s) Animals were treated for 10 days	POD: mg/kg-bw/day (Dichotomous (P/N)) -Positive in Herschberger assay at 100 mg/kg/day n= 6 Dose= 0, n= 6 Dose= 20, n= 6 Dose= 100, n= 6 Dose= 500, mg/kg-bw/day	See footnotes for full summary ⁷	No major limitation.	Nutritional/Metabolic- Body weight-Other (please specify below) (Clinical signs)-Clinical signs- Hepatic/Liver-Liver weight-Renal/Kidney- Kidney weight-Other (please specify below) (Endocrine)- Adrenal weight- Reproductive/Developmental- The following 5 tissues were weighed: testes, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus (LABC), and Cowper's gland. Serum testosterone and luteinizing hormone; Medium	Lee et. al 2007 673292

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
OECD protocol for detecting endocrine disruptors (OECD, 2001). Rat-Sprague-Dawley - [rat]- Male	Oral-Gavage-Duration: Short-term (>1-30 days)-7-10-day(s) 7 days/week 10 day(s) Animals were treated for 10 days	POD: mg/kg-bw/day (Dichotomous (P/N)) -Negative in Hershberger assay n= 6 Dose= 0, n= 6 Dose= 20, n= 6 Dose= 100, n= 6 Dose= 500, mg/kg-bw/day	Hershberger assay was performed in castrated Sprague-Dawley male rats. One week after surgery, animals were administered 0, 20, 100 or 500 mg/kg/day dibutyl phthalate (DBP) in corn oil via oral gavage along with 0.4 mg/kg/day testosterone propionate delivered subcutaneously for 10 days. Endpoints evaluated included lethality, clinical signs, body weight, serum testosterone and luteinizing hormone, organ weights (liver, kidneys, adrenal gland, testes, glans penis, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus [LABC], and Cowper's glands). All animals survived the entirety of the experiment. No clinical signs of toxicity were seen. No significant differences in terminal body weights were seen compared to control. No significant difference in serum LH levels were seen compared to testosterone alone control. A significant decrease in serum testosterone was seen (~30) at 100 and 500 mg/kg/day compared to testosterone alone control. No significant difference in absolute liver, kidney, or adrenal glands compared to testosterone control. Significant decreases in absolute ventral weight were seen (19%, 23%, and 19%) at 20, 100, and 500 mg/kg/day compared to testosterone alone. No other significant changes in weights of sex accessory tissues were seen. DBP is considered to be negative for this assay given a decrease in 2/5 androgen-dependent tissues was not seen. A positive control group for antiandrogenic effects (treated with flutamide) was included and gave expected results (data not shown).	No major limitation.	Nutritional/Metabolic-Body weight-Other (please specify below) (Clinical signs)-Clinical signs-Hepatic/Liver-Liver weight-Renal/Kidney- Kidney weight-Other (please specify below) (Endocrine)-Adrenal weight-Reproductive/Developmental-The following 5 tissues were weighed: testes, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus (LABC), and Cowper's gland. Serum testosterone and luteinizing hormone; Medium	Lee et. al 2007 673292

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
OECD protocol for detecting endocrine disruptors (OECD, 2001). Rat-Sprague-Dawley - [rat]- Male	Oral-Gavage-Duration: Short-term (>1-30 days)-7-10-day(s) 7 days/week 10 day(s) Animals were treated for 10 days	POD: mg/kg-bw/day (Dichotomous (P/N)) -Negative in Hershberger assay n= 6 Dose= 0, n= 6 Dose= 20, n= 6 Dose= 100, n= 6 Dose= 500, mg/kg-bw/day	Hershberger assay was performed in castrated Sprague-Dawley male rats. One week after surgery, animals were administered 0, 20, 100 or 500 mg/kg/day of butyl benzyl phthalate (BBP) in corn oil via oral gavage along with 0.4 mg/kg/day testosterone propionate delivered subcutaneously for 10 days. Endpoints evaluated included lethality, clinical signs, body weight, serum testosterone and luteinizing hormone, organ weights (liver, kidneys, adrenal gland, testes, glans penis, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus [LABC], and Cowper's glands). All animals survived the entirety of the experiment. No clinical signs of toxicity were seen. No significant differences in terminal body weights were seen compared to control. Serum LH was significantly increased ~25% and serum testosterone was decreased ~30% at 100 and 500 mg/kg/day compared to testosterone alone control. No significant difference in absolute liver, kidney, or adrenal glands weights were seen compared to testosterone control. No significant difference in the weights of the sex accessory tissues were seen compared to testosterone alone. BBP is considered to be negative for this assay given a decrease in the weights of 2/5 androgen-dependent tissues was not seen. A positive control group for antiandrogenic effects (treated with flutamide) was included and gave expected results (data not shown).	No major limitation.	Nutritional/Metabolic- Body weight-Other (please specify below) (Clinical signs)-Clinical signs- Hepatic/Liver-Liver weight-Renal/Kidney- Kidney weight-Other (please specify below) (Endocrine)- Adrenal weight- Reproductive/Developmental- The following 5 tissues were weighed: testes, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus (LABC), and Cowper's gland. Serum testosterone and luteinizing hormone; Medium	Lee et. al 2007 673292

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
OECD protocol for detecting endocrine disruptors (OECD, 2001). Rat-Sprague-Dawley - [rat]- Male	Oral-Gavage-Duration: Short-term (>1-30 days)-7-10-day(s) 7 days/week 10 day(s) Animals were treated for 10 days	POD: mg/kg-bw/day (Dichotomous (P/N)) -Positive in Hershberger assay at 500 mg/kg/day n= 6 Dose= 0, n= 6 Dose= 20, n= 6 Dose= 100, n= 6 Dose= 500, mg/kg-bw/day	Hershberger assay was performed in castrated Sprague-Dawley male rats. One week after surgery, animals were administered 0, 20, 100 or 500 mg/kg/day of di-isobutyl phthalate (DINP) in corn oil via oral gavage along with 0.4 mg/kg/day testosterone propionate delivered subcutaneously for 10 days. Endpoints evaluated included lethality, clinical signs, body weight, serum testosterone and luteinizing hormone, organ weights (liver, kidneys, adrenal gland, testes, glans penis, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus [LABC], and Cowper's glands). All animals survived the entirety of the experiment. No clinical signs of toxicity were seen. No significant differences in terminal body weights were seen compared to control. At 500 mg/kg/day, serum LH was significantly increased (~32%) and serum testosterone was significantly decreased (~18%) compared to testosterone alone control. No significant difference in absolute liver, kidney, or adrenal glands weights were seen compared to testosterone control. Significant decreases in absolute seminal vesicles weight (22%, 20%, and 22%) at 20, 100, and 500 mg/kg/day, respectively, and LBC weight (18%) at 500 mg/kg/day were seen compared to testosterone alone. Ventral prostate, Cowper's gland or Glans penis weights were not significantly different compared to testosterone alone. A reduction in the weight of two out of the five androgen-dependent tissues occurred at 500 mg/kg/day, indicating a positive response. A positive control group for antiandrogenic effects (treated with flutamide) was included and gave expected results (data not shown).	No major limitation.	Nutritional/Metabolic-Body weight-Other (please specify below) (Clinical signs)-Clinical signs-Hepatic/Liver-Liver weight-Renal/Kidney- Kidney weight-Other (please specify below) (Endocrine)-Adrenal weight-Reproductive/Developmental-The following 5 tissues were weighed: testes, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus (LABC), and Cowper's gland. Serum testosterone and luteinizing hormone; Medium	Lee et. al 2007 673292

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Butyl benzyl phthalate- Parent compound - Short-term (>1-30 days)

Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
OECD protocol for detecting endocrine disruptors (OECD, 2001). Rat-Sprague-Dawley - [rat]- Male	Oral-Gavage-Duration: Short-term (>1-30 days)-7-10-day(s) 7 days/week 10 day(s) Animals were treated for 10 days	POD: mg/kg-bw/day (Dichotomous (P/N)) -Positive in Hershberger assay at 500 mg/kg/day n= 6 Dose= 0, n= 6 Dose= 20, n= 6 Dose= 100, n= 6 Dose= 500, mg/kg-bw/day	Hershberger assay was performed in castrated Sprague-Dawley male rats. One week after surgery, animals were administered 0, 20, 100 or 500 mg/kg/day of di-isodecyl phthalate (DIDP) in corn oil via oral gavage along with 0.4 mg/kg/day testosterone propionate delivered subcutaneously for 10 days. Endpoints evaluated included lethality, clinical signs, body weight, serum testosterone and luteinizing hormone, organ weights (liver, kidneys, adrenal gland, testes, glans penis, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus [LABC], and Cowper's glands). All animals survived the entirety of the experiment. No clinical signs of toxicity were seen. No significant differences in terminal body weights were seen compared to control. Significant increases in serum LH ~33% occurred at 100 and 500 mg/kg/day and significant decreases in testosterone (~27%) was seen in all dose groups compared to testosterone alone control. Absolute liver weight was significantly increased at 500 mg/kg/day (17%) compared to testosterone alone. At 500 mg/kg/day, significant decreases in absolute seminal vesicles weight (9%) and ventral prostate weight (21%) compared to testosterone alone. No significant differences in LAB, Cowper's glands or glans penis weight were seen compared to testosterone alone. A reduction in the weight of two out of the five androgen-dependent tissues occurred at 500 mg/kg/day, indicating a positive response. A positive control group for antiandrogenic effects (treated with flutamide) was included and gave expected results (data not shown).	No major limitation.	Nutritional/Metabolic-Body weight-Other (please specify below) (Clinical signs)-Clinical signs-Hepatic/Liver-Liver weight-Renal/Kidney- Kidney weight-Other (please specify below) (Endocrine)-Adrenal weight-Reproductive/Developmental-The following 5 tissues were weighed: testes, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus (LABC), and Cowper's gland. Serum testosterone and luteinizing hormone; Medium	Lee et. al 2007 673292

* Overall Quality Determination

¹ 2219796: Pregnant albino rats (at least 6/group; not specified) were administered 0, 4, 20, or 100 mg/kg/day of butyl benzyl phthalate (BBP) in corn oil via gavage from gestational day (GD) 14 up to parturition. An untreated control and a positive control (6 ug/kg diethylstilbestrol) group were also included. Dams were allowed to deliver naturally. Dams were monitored for clinical signs of toxicity, weight gain and gestation length. Endpoints evaluated included litter size, sex ratio, and number of live and dead pups on PND 1 (live birth index), PND 4 (viability index), and PND 21 (weaning index). Pups were examined for gross external abnormalities, physical development landmarks (eye opening, fur formation, pinna detachment, and testis descend), anogenital distance (PND 5 and PND 25), pups body weight (PND 1, PND 21, and biweekly thereafter until PND 75). On PND 75, representative number of male animals from each dam were sacrificed. Endpoints evaluated in sacrificed males included organ weights (testes, epididymis, prostate, vas deference, and seminal vesicle, liver, kidney, and adrenal gland), sperm quality parameters (sperm motility, sperm count, testicular spermatid count, daily sperm production, and sperm head shape abnormality), 17 β -hydroxy steroid dehydrogenase (HSD) in testis, and serum testosterone levels. No dams died during treatment. Clinical signs were not reported. Body weight gain was significantly decreased (~9%, 6%, and 9%) in the 4, 20, and 100 mg/kg/day, respectively from untreated control group on GD 21. No significant difference in body weight gain was seen between control (29%) and vehicle treated group (27%). Gestation length was significantly increased in all dosed groups (~21.25 days in control, ~21.6 days in vehicle control; ~23.2, 23.0, and 23.0 days at 4, 20, 100 mg/kg/day, respectively) compared to control. No significant difference in litter size, live pups/litter, fetal mortality, sex ratio, live birth index, viability index, weanling index, AGD in males on PND 5 and 25 from control. Male body weights were significantly decreased on PND 1 (3%, 4%, and 5%) and PND 21 (12%, 22%, and 16%) at 4, 20, and 100 mg/kg/day, respectively compared to control. No significant difference in age of developmental landmarks (pinna detachment, fur formation, eye opening, and testis descend) compared to control. On PND 75, significant decreases in body weight (2% and 4%) at 20 and 100 mg/kg/day, respectively compared to control. Significant decreases in absolute epididymis weight (13%), prostate weight (12%), and kidney weight (11%) were seen in the 100 mg/kg/day compared to control. Significant decreases in cauda epididymal sperm count (10%) and percentage of motile sperm (6%) were seen in the 100 mg/kg/day group compared to control. The percentage of sperm abnormalities was significantly increased from 1.12% in control to 1.72% in the 100 mg/kg/day. No significant difference in spermatid count or daily sperm production compared to control. No significant difference in testicular 17 β -HSD (although trended downward) compared to control. Serum testosterone was significantly decreased (64%) at 100 mg/kg/day compared to control. The positive control group gave expected results. No significant differences in parameters were seen between the untreated control and vehicle control group. A LOAEL of 4 mg/kg/day was determined by this reviewer.

² 1325511: Fisher 344 rats (5/sex/group) were provided a diet containing 0, 0.6, 1.2, or 2.5% BBP for 21 days. Authors calculated mean BBP intake based on food intake and body weight as 639, 1277, and 2450 mg/kg/day in males and 679, 1346, and 2628 mg/kg/day in females at 0.6%, 1.2%, and 2.5% BBP in diet, respectively. Endpoints evaluated included clinical signs (daily), body weight (days: -3, 0, 3, 7, 10, 14, 17, and 20), food intake (measured in intervals from days: -3 to 0; 0-3; 3-7; 7-10; 10-14; 14-17; and 17-20), serum concentrations of triglyceride and total cholesterol, gross necropsy, organ weights (liver, kidney, and testes), histopathology (liver, kidney, and testes), biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation levels and protein concentration; microsomal fraction rate of lauric acid hydroxylation) and ultrastructure of liver to assess peroxisome proliferation (TEM; one negative control, 2 positive controls and 2 from high-dose groups). A positive control group was also included in which rats (n=5/sex) were fed 1.2% DEHP (1135 mg/kg/day for males and 1150 mg/kg/day for females). The study did not report that any animals died, and all animals were accounted for in the results. Clinical signs were not reported. Male body weights were significantly decreased in the mid-dose group (10-12%) on days 3-20 and in the high-dose group 18% on day 3 and 27-28% on days 7-20, compared to control. In females, body weights were significantly decreased in the high-dose group (10-17%) on days 3-17 compared to control. Terminal body weights were significantly decreased in the high-dosed males (29%) and females (10%) compared to control. Food intake was significantly decreased on days 0-3 in males (14%, 24% and 61%) and females (21%, 27%, and 58%) in the low-, mid- and high-dose groups, respectively compared to control. After the third day, food intake remained significantly decreased throughout study in the high dose groups (21-42% in males; 13-21% in females) compared to control. Serum triglycerides were significantly decreased in males (33% and 34%) in the mid-, and high-dose groups and significantly increased in the high-dose females (100%) compared to control. Serum total cholesterol levels in females were significantly decreased (20% and 15%) in the low- and mid-dosed group compared to control; no difference in males was observed. Absolute liver weights were significantly increased in males (24% and 21%) and females (21% and 53%) in the mid and high-dose groups, respectively; and relative liver weights in males (21%, 38% and 71%) and females (11%, 23% and 71%) in the low-, mid-, and high-dose groups, respectively compared to control. Absolute kidney weights were significantly decreased in the high-dose males (20%) and significantly increased in mid-dosed females (11%) compared to control. Relative kidney weights were significantly increased in males (9%, 14%, 13%) and females (9%, 13%, 8%) in the low-, mid-, and high-dose groups, respectively. In the high-dose group, significant decreases in absolute (73%) and relative (62%) testis weight and a significant increase in relative testis weight in the low-dose group (11%) compared to control. In the livers, cyanide-insensitive palmitoyl-CoA oxidation levels were significantly increased in males (73%, 150% and 341%) in low-, mid-, and high-dose groups and high-dose females (185%) compared to control. In male livers, significant increases in lauric acid 11-hydroxylase activities (107%, 143% and 164%) and 12-hydroxylase activities (454%, 701% and 669%) were seen in the low-, mid-, and high-dose groups. In female livers, significant increases in lauric acid 11-hydroxylase activities (73% and 119%) and 12-hydroxylase activities (29% and 301%) were seen in the mid-and high-dose groups compared to control. No significant differences in total protein levels in livers were seen in males and females compared to control. Microsomal protein levels were significantly decreased (15%) in the high-dose group males and low-dose females (15%) compared to control. In the high-dose group, histological examination of liver showed increased incidences of slight reduction cytoplasmic basophilia in males (5/5) and females (4/5) compared to control (0/5) and increased centrilobular eosinophilia in males (3/5) compared to control (0/5). Severe atrophy of the testis was seen in all males in the high-dose group, compared to control (0/5). Centrilobular and periportal peroxisome proliferation were moderately increased in high-dose male and females compared to control groups. In the positive control DEHP group, expected effects on the liver were observed (increased liver weights, decreased serum triglycerides and total cholesterol increased liver PCoA levels and lauric acid 11 and 12 hydroxylase activities, reduction in cytoplasmic basophilia, marked increase in peroxisome proliferation).

³ 1325511: Fisher 344 rats (5/sex/group) were provided a diet containing 0, 0.6, 1.2, or 2.5% DBP for 21 days. Authors calculated mean DBP intake based on food intake and body weight as 624, 1234, and 2160 mg/kg/day in males, and 632, 1262 and 2111 mg/kg/day in females at 0.6%, 1.2%, and 2.5% DBP in diet, respectively. Endpoints evaluated included clinical signs (daily), body weight (days: -3, 0, 3, 7, 10, 14, 17, and 20), food intake (measured in intervals from days: -3 to 0; 0-3; 3-7; 7-10; 10-14; 14-17; and 17-20), serum concentrations of triglyceride and total cholesterol, gross necropsy, organ weights (liver, kidney, and testes), histopathology (liver, kidney, and testes), biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation levels and protein concentration; microsomal fraction rate of lauric acid hydroxylation) and ultrastructure of liver to assess peroxisome proliferation (TEM; one negative control, 2 positive controls and 2 from high-dose groups). A positive control group was also included in which rats (n=5/sex) were fed 1.2% DEHP (1160 mg/kg/day for males and 1095 mg/kg/day for females). The study did not report that any animals died, and all animals were accounted for in the results. Clinical signs were not reported. Male body weights were significantly decreased in the mid-dose group (4-5%) on days 7-14; and the high-dose group (16%) on day 3 and 24-31% on days 7-20. In females, body weights were significantly decreased in the high-dose group (7-12%) from day 3-17 compared to control. Terminal body weights were significantly decreased in high-dose males (29%) and females (8%) compared to control. Food intake in males was significantly increased in the low-dose group (18-21%) on days 0-7, and in the mid-dose group (16%) on day 3-7 and (12%) on day 14-17. In the high-dose group, food intake was significantly decreased in males (16-50%) throughout the study and in females (28-55%) on days 0-7. Serum triglycerides were significantly decreased in males (31%, 44%, 40%) in the low-, mid-, and high-dose groups, respectively and significantly increased in females (32%) in high-dose females, compared to control. Serum total cholesterol was significantly decreased in males (42%, 31%, and 30%) and females (31%, 30% and 20%) in low-, mid-, and high-dose groups, respectively compared to control. Significant increases in absolute liver weight in males (28%, 56% and 31%) and females (9%, 16% and 48%) and relative liver weights in males (30%, 61% and 86%) and females (8%, 16% and 61%) were seen in the low-, mid-, and high-dose group, respectively compared to control. Absolute kidney weight was significantly decreased 16% in the high-dose group and relative kidney weight was significantly increased (9% and 19%) in the mid- and high-dose males, respectively compared to control. In females, absolute kidney weight was increased in low-dose group (7%) and relative kidney weight (8%) in the high-dose group, compared to control. In the high-dose group, significant decreases in absolute (71%) and relative (58%) testis weight were seen compared to control. In the liver, significant increases in cyanide-insensitive palmitoyl-CoA oxidation levels were seen in males (220% and 498%) in the mid- and high-dose groups, respectively and in females (78%) in the high-dose group compared to control. In males, significant increases in lauric acid 11-hydroxylase activities (150%, 183% and 183%) and 12-hydroxylase activities (541%, 647% and 582%) occurred in the liver in the low-, mid-, and high-dose groups, respectively compared to control. In females, significant increases in lauric acid 11-hydroxylase activities (67% and 150%) were seen in the mid- and high-dose group livers, respectively; and 12-hydroxylase activities in the liver (357%) of the high-dose group compared to control. Total protein levels were significantly increased in male livers (8% and 17%) in the low- and mid-dose group, respectively and in female livers (13% and 21%) in the mid- and high-dose groups. No significant differences in microsomal protein levels were seen compared to control. Histological examination of liver showed increased incidences of slight reduction cytoplasmic basophilia in males (5/5) and females (5/5) in the high-dose group and in mid-dose males (4/5) compared to control (0/5). Severe atrophy of the testes was seen in all males in the high-dose group, compared to control (0/5). Centrilobular and periportal peroxisome proliferation were moderately and markedly increased in high-dose male and females compared to control groups. In the positive control DEHP group, expected effects on the liver were observed (increased liver weights, decreased serum triglycerides and total cholesterol increased liver PCoA levels and lauric acid 11 and 12 hydroxylase activities, reduction in cytoplasmic basophilia, marked increase in peroxisome proliferation).

⁴ 1325511: Fisher 344 rats (5/sex/group) were provided a diet containing 0, 0.3, 1.2, 2.5% DIDP for 21 days. Authors calculated mean DIDP intake based on food intake and body weight as 304, 1134 and 2100 mg/kg/day in males and 263, 1042 and 1972 mg/kg/day in females at 0, 0.3, 1.2, 2.5% DIDP in diet, respectively. Endpoints evaluated included clinical signs (daily), body weight (days: -3, 0, 3, 7, 10, 14, 17, and 20), food intake (measured in intervals from days: -3 to 0; 0-3; 3-7; 7-10; 10-14; 14-17; and 17-20), serum concentrations of triglyceride and total cholesterol, gross necropsy, organ weights (liver, kidney, and testes), histopathology (liver, kidney, and testes), biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation levels and protein concentration; microsomal fraction rate of lauric acid hydroxylation) and ultrastructure of liver to assess peroxisome proliferation (TEM; one negative control, 2 positive controls and 2 from high-dose groups). A positive control group was also included in which rats (n=5/sex) were fed 1.2% DEHP (1077 mg/kg/day for males and 966 mg/kg/day for females). The study did not report that any animals died, and all animals were accounted for in the results. Clinical signs were not reported. Body weights were significantly decreased in the high-dose group males (18-31%) on days 3-20 and females (13-17%) on days 10-20 compared to control. Terminal body weights were significantly decreased 32% in males and 20% in females compared to control. Food intake in the high-dose group was significantly decreased from day 0-3 in males (48%) and females (41%) compared to control; male food intake remained decreased (28-36%) throughout the study. Serum triglycerides in males

were significantly decreased (34% and 34%) in the mid- and high-dose males; no difference was seen in females compared to control. Serum total cholesterol was significantly decreased in the mid-dose males (25%) and low-dose females (22%) compared to control. In males, significant increases in absolute liver weight (21%, 86% and 71%) and relative liver weights (21%, 101% and 153%) were seen in the low-, mid- and high-dose groups, respectively compared to control. In females, significant increases in absolute liver weights (60% and 92%) and relative liver weight (76% and 138%) were seen in the mid- and high-dose groups, respectively compared to control. Absolute kidney weights were significantly increased (11% and 11%) as were relative kidney weights (10% and 19%) in males the low- and mid-dosed groups, respectively compared to control. In the high-dose male group, absolute kidney weight was significantly decreased (19%), relative kidney weight was significantly increased (19%), absolute testis weight was significantly decreased (11%) and relative testis weight was significantly increased (31%) compared to control; this maybe a reflection of the significant decrease in body weight in this group. In females, absolute kidney weight was significantly decreased in the high-dose group (13%) and relative kidney weights were significantly increased (9% and 9%) in the mid- and high-dose groups compared to control. In the liver, levels of cyanide-insensitive palmitoyl-CoA oxidation were significantly increased in males (10-fold and 16-fold) and in females (7-fold and 13-fold) in the mid- and high-dose groups compared to control. Activities of lauric acid 11-hydroxylase in the liver were significantly increased in males in the mid- (4-fold) and high-dose group (4-fold); no difference was seen in females compared to control. Activities of lauric acid 12-hydroxylase in the liver were significantly decreased in males (4-fold, 11-fold and 11-fold) in the low-, mid- and high-dose group, respectively and in females in the high-dose group (4-fold) compared to control. Total protein in the liver significantly increased in males (19% and 18%) and females (20% and 21%) in mid- and high-dose groups, respectively compared to control. In the high-dose group, histological examination of liver showed increased incidences of reduced cytoplasmic basophilia and increased cytoplasmic eosinophilia in 5/5 males and 5/5 females compared 0/5 males and females in controls. Proliferation of centrilobular and periportal peroxisomes were markedly increase in males and very markedly increase in females compared to control. In the positive control DEHP group, expected effects on the liver were observed (increased liver weights, decreased serum triglycerides and total cholesterol increased liver PCoA levels and lauric acid 11 and 12 hydroxylase activities, reduction in cytoplasmic basophilia, marked increase in peroxisome proliferation.

⁵ 1325511: Fisher 344 rats (5/sex/group) were provided a diet containing 0, 0.3, 1.2, 2.5% DIMP for 21 days. Authors calculated mean DIMP intake based on food intake and body weight as 639, 1192, and 2195 mg/kg/day in males and 607, 1193, 2289 mg/kg/day in females at 0, 0.3, 1.2, 2.5% DIMP in diet, respectively. Endpoints evaluated included clinical signs (daily), body weight (days: -3, 0, 3, 7, 10, 14, 17, and 20), food intake (measured in intervals from days: -3 to 0; 0-3; 3-7; 7-10; 10-14; 14-17; and 17-20), serum concentrations of triglyceride and total cholesterol, gross necropsy, organ weights (liver, kidney, and testes), histopathology (liver, kidney, and testes), biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation levels and protein concentration; microsomal fraction rate of lauric acid hydroxylation) and ultrastructure of liver to assess peroxisome proliferation (TEM; one negative control, 2 positive controls and 2 from high-dose groups). A positive control group was also included in which rats (n=5/sex) were fed 1.2% DEHP (1084 mg/kg/day for males and 896 mg/kg/day for females). The study did not report that any animals died, and all animals were accounted for in the results. Clinical signs were not reported. Body weights were significantly decreased in mid-dose males (6-12%) from days 7-20 and high-dose males (10-28%) from days 3-20; and in females in the mid-dose group (6-7%) on days 7-10 and high-dose group (9-14%) on days 3-20. Terminal body weights were significantly decreased in males (13% and 30%) in mid-and high-dose groups, respectively and in high-dose females (16%) compared to control. Food intake in males was decreased in (10-14%) on day 7-20 in the mid-dose groups. In the high-dose group, food intake was decreased the first 3 days 48% in males and 41% in females; food intake in males remained decreased (19-36%) for the remainder of the study in males but returned to control levels in females. Serum triglycerides were significantly decreased in males (24%, 42% and 48%) in the low-, mid-, and high-dose groups, respectively and in females (23% and 26%) in the mid- and high dose groups compared to control. Serum total cholesterol levels were significantly decreased in males (24%, 32%, and 9%) and females (24%, 15%, and 14%) in the low-, mid-, and high-dose groups, respectively. Significant increases in absolute liver weight were seen in males (36%, 50% and 65%) and females (24%, 64%, and 98%) and relative liver weight in males (36%, 73%, 132%) and females (31%, 75% and 137%) in the low-, mid- and high-dose groups, respectively compared to control. Absolute kidney weights in males were significantly increased 14% in the low-dose group and decreased in the high-dose group (13%) compared to control. No significant differences in absolute kidney weight were seen in females compared to control. Relative kidney weights were increased in males (15%, 22% and 24%) and females (7%, 8% and 14%) in the low-, mid-, and high-dose groups respectively compared to control. Relative (but not absolute) testis weight was significantly increased 35% in the high-dose group compared to control; this may be a reflection of the severe decrease in body weight in this group. In the liver cyanide-insensitive palmitoyl-CoA oxidation levels were significantly increased in males (5-fold and 10-fold) and females (4-fold and 11-fold) in mid- and high-dose groups, respectively compared to control. In males, significant increases in the activities of lauric acid 11-hydroxylase (2-fold, 3-fold, and 3-fold) and lauric acid 12-hydroxylase (5-fold, 8-fold, and 10-fold) in the low-, mid- and high-dose groups, respectively compared to control. In the high-dosed females, significant increases in the activities of lauric acid 11-hydroxylase (5-fold) and lauric acid 12-hydroxylase (8-fold) were seen in the liver compared to control. Total protein levels in the liver were significantly increased in males (8%, 10%, and 18%) and females (19%, 20%, and 23%) in the low-, mid, and high-dose group. Microsomal protein levels were significantly in females (17% and 17%) in the low- and mid-dose groups respectively compared to control. In the high-dose group, histological examination of liver showed increased incidences of reduction cytoplasmic basophilia and increased cytoplasmic eosinophilia in 5/5 males and 5/5 females compared 0/5 males and females in controls. Proliferation of centrilobular and periportal peroxisomes were very markedly increase in males and markedly increase in females compared to control. In the positive control DEHP group, expected effects on the liver were observed (increased liver weights, decreased serum triglycerides and total cholesterol increased liver PCoA levels and lauric acid 11 and 12 hydroxylase activities, reduction in cytoplasmic basophilia, marked increase in peroxisome proliferation.

⁶ 1325511: Fisher 344 rats (5/sex/group) were provided a diet containing 0 or 1.2% DEHP for 21 days. The experiment was repeated 7 times, as rats receiving DEHP served as a positive control group for hepatic peroxisome proliferation experiments performed with different phthalic acid esters. Authors calculated mean DEHP intake for each experiment based on dietary intake. This reviewer averaged the intake for all eight experiments. The mean intake for males was 1149 +/- 64 mg/kg/day and in females as 1115 +/- 117 mg/kg/day for all experiments. Endpoints evaluated included clinical signs (daily), body weight (days-3, 0, 3, 7, 10, 14, 17, and 20), food intake (measured in intervals from days: -3 to 0; 0-3; 3-7; 7-10; 10-14; 14-17; and 17-20), serum concentrations of triglyceride and total cholesterol, gross necropsy, organ weights (liver, kidney, and testes), histopathology (liver, kidney, and testes), biochemical analysis of liver (cyanide-insensitive palmitoyl-CoA oxidation [PCoA] levels and protein concentration; microsomal fraction rate of lauric acid hydroxylation) and ultrastructure of liver to assess peroxisome proliferation. The study did not report that any animals died, and all animals were accounted for in the results. Clinical signs were not reported. Body weights were significantly decreased in males (in 6 out 8 experiments) and females (in 8 out of 8 experiments) compared to control. Food intake was significantly decreased in males (in 7/8 experiments and increased in 1/8 experiments) and females (6/8 experiments and no change in 2/8 experiments) compared to control. In males significant decreases in serum triglycerides (in 6/8 experiments) and total cholesterol (in 8/8 experiments) were seen. In females, no changes in serum triglycerides or total cholesterol were seen in 5/8 experiments; decreases in serum total cholesterol was observed in 3/8 experiments compared to control. A significant increase in absolute and relative liver weights were seen in males and females in all 8 experiments, compared to control. No changes in absolute kidney weights were seen but significant increases in relative kidney weights were observed (males 7/8 experiments; females (in 6/8 experiments) compared to control. These changes may be a reflection of the decreased body weight and not effect on the kidney itself. Changes in testis weights were not consistent between the eight experiments. Absolute and relative testis weights were significantly decreased in 1/8 experiments; increases in relative testis weight were reported in 2/8 experiments; decreases in relative testis weight was reported in 1/8 experiments; no change absolute or relative testis weights were seen in 4/8 experiments compared to control. Histologically, reduction of cytoplasmic basophilia in the liver was observed in 5/5 males and 5/5 females in all 8 experiments. No significant histological changes were seen in the kidneys or testis in male or females in all 8 experiments. Significant increases in liver PCoA levels and lauric acid 11 and 12 hydroxylase activities, and marked increase in peroxisome proliferation were observed in male and female rats after exposure.

⁷ 673292: Hershberger assay was performed in castrated Sprague-Dawley male rats. One week after surgery, animals were administered 0, 20, 100 or 500 mg/kg/day DEHP in corn oil via oral gavage along with 0.4 mg/kg/day

testosterone propionate delivered subcutaneously for 10 days. Endpoints evaluated included lethality, clinical signs, body weight, serum testosterone and luteinizing hormone, organ weights (liver, kidneys, adrenal gland, testes, glans penis, ventral prostates, combined seminal vesicles and coagulating glands, levator ani/bulbocavernosus [LABC], and Cowper's glands). All animals survived the entirety of the experiment. No clinical signs of toxicity were seen. No significant differences in terminal body weights were seen compared to control. Serum LH levels were significantly increased (~ 38% and 50%) at 100 and 500 mg/kg/day, respectively compared to testosterone alone. Serum testosterone was not significantly different from testosterone alone group. Absolute liver weight was significantly increased (27%) at 500 mg/kg/day compared to testosterone alone treated rats. No significant difference in kidney or adrenal gland weights were seen between the groups. Significant decreases in absolute seminal vesicle weight (13% and 28%) at 100 and 500 mg/kg/day, respectively, ventral prostate weight (17%, 18%, and 31%) at 20, 100, and 500 mg/kg/day, and LABC weight (21%) at 500 mg/kg/day were seen compared to testosterone alone control. No difference in Cowper's gland or Glans penis weight were seen. A reduction in the weight of two out of the five androgen-dependent tissues occurred at 100 mg/kg/day, indicating a positive response. A positive control group for antiandrogenic effects (treated with flutamide) was included and gave expected results (data not shown).

Butyl benzyl phthalate- Parent compound - Reproductive/Developmental						
Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
OECD 416 Rat-Crj: CD(SD) - [rat]-Both	Oral-Gavage-Duration: Reproductive/Developmental- 2-F0- pre mating (10 weeks)-F0- mating (0-14 days)-F0 - gestation (21-22 days)-F0- lactation (3 weeks)-F1- pre mating (10 weeks)-F1 - mating (0-14 days)-F1 - gestation (21-22 days)-F1- lactation (3 weeks)-F1- post-natal (3 weeks)-F0- pre mating (10 weeks)-F0- mating (0-14 days)-F1- pre mating (10 weeks)-F1- mating (0-14 days)-F1- post-natal (3 weeks) Specific days are not provided, dosing described as 10 weeks prior to mating, mating period, gestation, and lactation, followed OECC 416	POD: 100 mg/kg-bw/day (LOAEL) -Reproductive changes in offspring n= 24 Dose= 0, n= 24 Dose= 100, n= 24 Dose= 200, n= 24 Dose= 400, mg/kg-bw/dayTotal # of generations: 2 Male Exposure: F0- pre mating, 10 weeks, F0- mating, 0-14 days, F1- pre mating, 10 weeks, F1- mating, 0-14 days, F1- post-natal, 3 weeks Female Exposure: F0- pre mating, 10 weeks, F0- mating, 0-14 days, F0 - gestation, 21-22 days, F0- lactation, 3 weeks, F1- pre mating, 10 weeks, F1- mating, 0-14 days, F1 - gestation, 21-22 days, F1- lactation, 3 weeks, F1- post-natal, 3 weeks	See footnotes for full summary ¹	The major limitation of this study is the lack of reporting. Some of the data are presented qualitatively or not at all, suggesting that differences may not have been observed, but this is not completely clear.	Reproductive/Developmental Mating index, fertility index, gestation index and length, number of implantations, number of pups, hormones, sperm index, sex ratios, reproductive development, body and organ weights, and gross necropsy of the offspring; Medium	Aso et. al 2005 674931

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Butyl benzyl phthalate- Parent compound - Reproductive/Developmental

Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
The study did not report any compliance guidelines or state if GLP condition were adhered to. Rat-Sprague-Dawley - [rat]- Both	Oral-Gavage-Duration: Reproductive/Developmental- F0 - gestation (GD14- GD18) Exposed from GD14- GD18	POD: 100 mg/kg-bw/day (LOAEL) -Developmental: decreased fetal testosterone production from testes (ex vivo), decreased fetal viability n= 3 Dose= 0, n= 2 Dose= 100, n= 2 Dose= 300, n= 3 Dose= 600, Dose= 900, mg/kg-bw/day Female Exposure: F0 - gestation, GD14- GD18	Pregnant Harlan SD rats and/or Charles Rivers SD rats were mated by the supplier and shipped GD1. For the following data, the rat species utilized was the Harlan SD rats. Animals were gavaged with various doses of BBP between GD 14-18. Dams were sacrificed on GD 18 approximately two hours after dosing, and fetal testes were obtained for determination of fetal testicular testosterone production. DBP experiments were conducted over several blocks (Blocks 2, 36, and 37) and results were reported for each individual block. Each block consisted of about 15 pregnant rats that were then randomly divided into groups based on weight to ensure equal distribution. Block 2 (n=5 control; n=2 BBP group) there was a reduction in fetal testicular testosterone production at the 750 mg/kg/day group (LOAEL). There was no change in fetal viability or maternal weight. Block 36 (n=2-3) there was a reduction in fetal testicular testosterone production at the 100 mg/kg/day group (LOAEL). Although there was a pup lost in one of the dose groups, there was not a significant decrease in fetal viability or maternal weight. Block 37 (n=3-4) there was no significant change in fetal testicular testosterone production (NOAEL was 100 mg/kg/day). Supplemental material considered in evaluation (HERO number 3045543).	The overall number of animals per experiment for the fetal measurements was often quite low, which would impact overall statistical power. Also, since the animals were stated to be shipped on GD1, there is likely stress related effects that is consistent across groups. Although maternal weight was recorded, fetal weight was not accounted for.	Furr et. al Reproductive/Developmental- Developmental - fetal survival- Reproductive/Developmental- Female reproductive - maternal weight gain- Reproductive/Developmental- Male Reproductive - testosterone; High	2014 2510906
No guideline or use of GLP conditions was specified Rat-Other (Crl:(CD)SD)- Female	Oral-Gavage-Duration: Reproductive/Developmental- 1-F0 - gestation (GD14- GD18) Daily gavage from GD14- GD18	POD: 300 mg/kg-bw/day (LOAEL) -Decreased ex vivo fetal testicular testosterone production n= 3 Dose= 0, n= 3 Dose= 100, n= 3 Dose= 300, n= 3 Dose= 600, n= 3 Dose= 900, mg/kg-bw/dayTotal # of generations: 1 Female Exposure: F0 - gestation, GD14-GD18	The current reference is a continuation from the same dataset discussed in Furr et al. 2014 (HERO: 2510906). Pregnant female rats were divided into blocks where either Harlan SD rats and/or Charles Rivers SD rats were utilized. For the following study, the Charles Rivers SD rats (Crl:(CD)SD) species were utilized. Each pregnant rat was randomly divided into groups based on weight to ensure equal distribution. Figure 2B showed decreased fetal testosterone production across multiple doses; 0, 100, 300, 600, or 900 mg/kg-day. Statistical analysis indicated a LOAEL of 300 mg/kg-day and a NOAEL of 100 mg/kg-day.	The overall number of animals per experiment for the fetal measurements was often quite low, which would impact overall statistical power. Also, since the animals were stated to be shipped on GD1, there is likely stress related effects that is consistent across groups. Although maternal weight was recorded, fetal weight was not accounted for.	Gray et. al Reproductive/Developmental- Fetal testosterone production ex vivo; High	2021 9419406

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Butyl benzyl phthalate- Parent compound - Reproductive/Developmental

Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
Study did not state which, if any, compliance guidelines were adhered to. Rat-Crj: CD(SD) - [rat]-Both	Oral-Gavage-Duration: Reproductive/Developmental- 2-F0- pre mating (2 weeks)-F0- mating (2 weeks)-F0 - gestation (3 weeks)-F0- lactation (3 weeks)-F1- pre mating (10 weeks)-F1- mating (2 weeks)-F1 - gestation (3 weeks)-F1- lactation (3 weeks)-F1- post-natal (3 weeks)-F0- pre mating (12 weeks)-F0- mating (2 weeks)-F1- pre mating (10 weeks)-F1- mating (2 weeks) 8-week-old male and female rats, 8 of each sex, were treated orally with BBP at 20, 100, or 500 mg/kg/day for 2 weeks. Exposure to BBP continued during cohabitation (at most for 7 days), and female exposure continued during gestation and lactation until postpartum day 21. F0 male rats were treated for 12 weeks prior to the 2-week cohabitation, until necropsy. F0 female rats were treated for 2 weeks prior to cohabitation, until necropsy (including during gestation, delivery, and lactation through postpartum day 21). F1 animals were treated by oral gavage after weaning (postnatal day 22)	POD: 20 mg/kg-bw/day (NOAEL) - Reproductive effects on parent rats and the next generation n= 25 Dose= 0, n= 25 Dose= 20, n= 25 Dose= 100, n= 25 Dose= 500, mg/kg-bw/dayTotal # of generations: 2 Male Exposure: F0- pre mating, 12 weeks, F0- mating, 2 weeks, F1- pre mating, 10 weeks, F1- mating, 2 weeks Female Exposure: F0- pre mating, 2 weeks, F0- mating, 2 weeks, F0 - gestation, 3 weeks, F0- lactation, 3 weeks, F1- pre mating, 10 weeks, F1- mating, 2 weeks, F1 - gestation, 3 weeks, F1- lactation, 3 weeks, F1- post-natal, 3 weeks	See footnotes for full summary ²	Study did not state which, if any, compliance guidelines were adhered to.	Reproductive/Developmental- F0 and F1: Female: estrous cycle, serum levels of prolactin, LH, FSH, TSH, T ₃ , T4 and estradiol; ovary and uterus weight, histology on ovaries, uterus, mammary gland, and vaginaF0 and F1 Male: testes, serum levels of testosterone, LH, FSH, TSH, T ₃ , and T4epididymides, ventral prostate, and serial vesicle weight; histology on testes, epididymides, prostate, and seminal vesicle with coagulating gland; percentage of motile sperm, progressive motile sperm, and sperm counts.Mating index, fertility index, gestation length, delivery index, Implantation sites, live and dead pups, pup weight, sex ratio, viability, external and internal abnormalities in pups, anogenital distance, developmental milestones, day of vaginal opening, and preputial separation, performance in behavioral and functional test (open-field, water multiple T-maze, and spontaneous motor activity); Medium	Nagao et. Reproductive/Developmental- F0 and F1: Female: 2000 estrous cycle, serum 675335 levels of prolactin, LH, FSH, TSH, T ₃ , T4 and estradiol; ovary and uterus weight, histology on ovaries, uterus, mammary gland, and vaginaF0 and F1 Male: testes, serum levels of testosterone, LH, FSH, TSH, T ₃ , and T4epididymides, ventral prostate, and serial vesicle weight; histology on testes, epididymides, prostate, and seminal vesicle with coagulating gland; percentage of motile sperm, progressive motile sperm, and sperm counts.Mating index, fertility index, gestation length, delivery index, Implantation sites, live and dead pups, pup weight, sex ratio, viability, external and internal abnormalities in pups, anogenital distance, developmental milestones, day of vaginal opening, and preputial separation, performance in behavioral and functional test (open-field, water multiple T-maze, and spontaneous motor activity); Medium

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Butyl benzyl phthalate- Parent compound - Reproductive/Developmental

Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
This study was conducted under GLP conditions and followed OECD 415 guidelines. Rat-Wistar - [rat]- Both	Oral-Diet-Duration: Reproductive/Developmental- 1-F0- premating (2-weeks)- F0- mating (up to 3 week (exact time not reported))-F0 - gestation (3 weeks)-F0- lactation (3 weeks)-F1- premating-F1- mating-F0- premating (10 weeks)-F0- mating (up to 3 week (exact time not reported))-F1- premating-F1- mating Exposure was through diet, which was available ad libitum to males during the premating and postmating phase; and to females in the premating, gestation, and lactation phase. F0 males and females were mated a second time to generate 2 F1 litters. Food consumption was measured to calculate the exposure level for each animal	POD: 0.4 % (in water or food) (NOAEL) - Decreased body weight gains and food consumption in pregnant dams n= 36 Dose= 0, n= 36 Dose= 0.2, n= 36 Dose= 0.4, n= 36 Dose= 0.8, % (in water or food)Total # of generations: 1 Male Exposure: F0- premating, 10 weeks, F0- mating, up to 3 week (exact time not reported), F1- premating, F1- mating Female Exposure: F0- premating, 2-weeks, F0- mating, up to 3 week (exact time not reported), F0 - gestation, 3 weeks, F0- lactation, 3 weeks, F1- premating, F1- mating	See footnotes for full summary ³	This study had some minor limitations. There was a small decrease in mean pup weight in the 0.8% exposure group. This decrease only reached statistical significance on lactation day 21 and only in the second litter. Authors speculate that the decrease is likely due to direct intake of the test substance via diet but given the experimental design, it is impossible to know for sure. Designing the experiment in a way that eliminates this possibility would have allowed the authors to more confidently interpret this finding. Another limitation was that the authors only examined the pathology results of the control and 0.8% experimental groups. While unlikely, it is possible that an adverse effect not present in the 0.8% group would have presented itself in the 0.2 or 0.4% dose groups.	Nutritional/Metabolic- Body weight, body weight gain, food consumption- Hepatic/Liver-Liver weight, histopathology, and gross necropsy; High	TNO (CIVO), 1993 1359183

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Butyl benzyl phthalate- Parent compound - Reproductive/Developmental

Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
The study was conducted according to U.S. EPA Office of Prevention, Pesticides and Toxic Substances (OPPTS), Health Effects Test Guidelines, OPPTS 870.3800 and was GLP compliant. Rat-Sprague-Dawley - [rat]- Both	Oral-Diet-Duration: Reproductive/Developmental- 2-F0- pre mating (10-weeks)-F0- mating-F0 - gestation-F0- lactation-F1- pre mating (10-weeks)-F1- mating-F1 - gestation-F1- lactation-F0- pre mating (10-weeks)-F0- mating-F1- pre mating (10-weeks)-F1- mating-F1- post-natal (necropsy at the end of female gestation period) Two generation study. P0 and F1 males were necropsied at the time of gestation periods for F1 and F2 offspring, respectively (PND0). Parental females were necropsied at weaning	POD: 50 mg/kg-bw/day (NOAEL) -Increased liver weights and liver histopathology; decreased mating and fertility indices, sperm parameters, and male reproductive organs; decreased pup body weights and AGD, delayed acquisition of puberty, retention of nipples and areolae, and male reproductive system malformations. n= 60 Dose= 0, n= 60 Dose= 50, n= 60 Dose= 250, n= 60 Dose= 750, mg/kg-bw/dayTotal # of generations: 2 Male Exposure: F0- pre mating, 10-weeks, F0- mating, F1- pre mating, 10-weeks, F1- mating, F1- post-natal, necropsy at the end of female gestation period Female Exposure: F0- pre mating, 10-weeks, F0- mating, F0 - gestation, F0- lactation, F1- pre mating, 10-weeks, F1- mating, F1 - gestation, F1- lactation	See footnotes for full summary ⁴	The study had several instances of "data not shown" or only qualitative reporting of data. Raw data were not provided in supplementary files to allow for an independent review. The dosing provided in mg/kg-day was approximate and separate dosing by sex, time (e.g., gestation, lactation), or generation was not provided.	Nutritional/Metabolic- Food consumption and body weights- Reproductive/Developmental- Parental: Estrous cyclicity and normality, necropsy with attention to the reproductive system, reproductive organ weights, ovarian primordial follicle counts (high dose F0 and F1 females), sperm parameters, histopathology of ovaries, vagina, uterus, testis, epididymis, seminal vesicles, prostate, reproductive outcomes (mating, fertility, gestational, pregnancy indices, precoital intervals). Developmental F1 and F2 offspring: Live and dead pups, pup weight, AGD, sex, stillbirth, liver birth, and survival indices, necropsy with focus on the reproductive system, retained nipples (males), acquisition of puberty, reproductive organ weights, and weights of brain, spleen, thymus in weanlings (PND 21)- Hepatic/Liver-Liver histopathology in parental animals.; Medium	Tyl et. al 2004 675462

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Butyl benzyl phthalate- Parent compound - Reproductive/Developmental

Guideline and Animal Species, Strain, Sex	Exposure Route and Exposure Duration	Study-wide POD and Dose/ Concentration(s)	Summary	Major Limitations	Principal Target Organs/Systems and OQD*	HERO ID
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* Overall Quality Determination

¹ 674931: The reproductive effects of butyl benzyl phthalate were examined using a 2-generation toxicity study in SD rats. Groups of 24 male and female rats were gavaged with doses of 0, 100, 200, or 400 mg/kg/day, 7 days/week. A range-finding study was briefly described as justification for the selection of doses; however, the range-finding details were limited and therefore not evaluated. Dosing in the F0 generation began 10 weeks prior to mating, and continued through mating (at 15 weeks), gestation, and lactation. F1 were dosed beginning at weaning using similar methods. Mating of the F1 generation began at 13 weeks and continued previously described. Body weights and food consumption were measured throughout the study. Reproductive indices were measured, including mating index, fertility index, gestation index and length, number of implantations, and number of pups. Sperm and hormone levels were evaluated in the F1 pups. Clinical signs, organ weights, gross necropsy, and histological examination were conducted on the F0 and F1 parents. Developmental indices were also measured, including sex ratios, reproductive development, body and organ weights, and gross necropsy of the offspring. Salivation was observed in the treated animals. Some variation occurred in food consumption, but no changes in body weights were observed in the F0 and F1 parents of either sex at any dose. No abnormal reproductive indices, hormone levels, or gross necropsy findings were observed in the F0 or F1 parents. Some differences in various non-reproductive organ weights were observed, but there was associated histopathology, so the significance was unknown. At 400 mg/kg/day, the incidence of small testes was noted in the F1 male rats, along with diffuse atrophy of the seminiferous tubules and Leydig cell hyperplasia. Altered anogenital distances were measured in the F1 females and the F2 males at 100 mg/kg/day.

² 675335: In a two-generation reproductive study, six-week-old male and thirteen-week-old female Crj:CD(SD)IGS rats (25/sex/group) were administered 0, 20, 100, or 500 mg/kg/day of butyl benzyl phthalate (BBP) in corn oil via gavage daily. F0 males were treated 12 weeks prior to the 2-week cohabitation until necropsy. F0 females were treated 2 weeks prior to cohabitation until necropsy. F1 animals were treated from weaning (postnatal day 22) until necropsy. Estrous cycle of females was monitored for two weeks prior to administration of BBP, during administration (prior to mating) and vaginal lavages continued until confirmation of copulation (gestation day 0). Dams were allowed to deliver naturally. F0 females were sacrifice on PND 22, and F0 males at 23 weeks of age (17 weeks of treatment; after confirmation of fertility by pairing with females). Endpoint evaluated included clinical signs, body weight, organ weight (brain, heart, lung, liver, spleen, kidneys, adrenal glands, thymus, testes, epididymides, ventral prostate, seminal vesicles, ovaries, uterus, thyroid gland, and pituitary), serum levels of the following in females: prolactin, luteinizing hormone (LH), follicle stimulating hormone (FSH), thyroid-stimulating hormone (TSH), triiodothyronine (T3), thyroxine (T4) and estradiol (E2), serum levels of the following in males: testosterone, LH, FSH, TSH, T3, and T4. Histopathologic examination was done on 10 mice from the control and 500 mg/kg groups only (ovaries, uterus, vagina, testes, epididymides, prostate, seminal vesicle with coagulating gland, liver, kidneys, mammary glands, thyroid gland, parathyroid gland, pituitary gland, and adrenal gland). The numbers of live and dead pups were recorded for each litter on PND 0-21, viability from PND 0-4 (pre-culling) and from PND 4-21. Pups were examined grossly for external abnormalities on PND 0, observed daily for clinical signs, sexed, and had body weights measured on PND 0, 4, 7, 14, and 21 and weekly thereafter until 13 weeks of age. Anogenital distance was determined on PND 0. On PND 4 pups were culled to 8 pups (4/sex) when possible. F1 pups were observed daily for developmental landmarks. Two pups/sex/litter in each group were examined daily for developmental neural reflexes (righting response, cliff-drop aversion response, negative geotaxis) and for physical development (pinna opening, upper tooth eruption, eyelid opening). On PND 22, two pups/sex/litter were sacrificed and to determine serum levels of testosterone, LH, TSH, FSH, T3, T4 in males and prolactin, LH, FSH, TSH, T3, T4 and E2 in females, organ weights (testes, epididymides, seminal vesicle with prostate, ovaries and uterus), and histopathology (testes and ovaries from 10 pups in all groups; epididymides, ventral prostate and seminal vesicle with coagulation gland, and uterus in 10 pups in the 500 mg/kg group and control only). Females were examined for vaginal opening (beginning on PND 28) and males for preputial separation (beginning PND 35) (two/sex/litter) and weighted on day when achieved. After weaning, one pup/sex/litter to be studied in a series of behavior and functional tests. The following test were performed: open-field activity (5-6 weeks of age), water multiple T-maze test (6-7 weeks of age), and spontaneous motor activity (7-8 weeks of age). These animals were then sacrificed at 10 weeks of age and the following organs weighed (testes, epididymides, prostate, seminal vesicles, uterus, and ovaries). At 13 weeks of age, F1 were mated in a 1:1 ratio within the same treatment group, avoiding sibling mating. Daily vaginal lavages were done from week 11 of age until copulation had been confirmed. Inseminated F1 females were allowed to deliver naturally. F1 males were sacrificed at 18 weeks and females at PND 21. Parameters described above (pregnancy, delivery, lactation, serum hormones, organ weights, histology, sperm motion and counts) were evaluated in F2 offspring. F2 pups were necropsied on PND21. No animals died during administration. Salivation was observed immediately after dosing in 18/25 males and 10/25 females at 100 mg/kg/day and all males and females in the 500 mg/kg/day group. In the 500 mg/kg/day group, male body weights were significantly decreased from days 101-119 (<10%) compared to control; food consumption was not significantly different (data not shown). Terminal body weight of males in the 500 mg/kg/day group were significantly decreased (7%) compared to control. No difference in body weight or food consumption was seen in females compared to control. No treatment related changes in estrous cycle were seen (cycle length pretreatment vs cycle during treatment). There were no significant differences in cohabitation days until copulation or in the number of vaginal estruses during cohabitation (data not shown). No significant difference in mating index, fertility index, gestation length or delivery index were seen compared to control. No abnormalities of lactation were observed in any dam. In the F0 males and females, no significant treatment-related differences in gross observation of any organ were seen at necropsy compared to control. In the 500 mg/kg/day males, significant increases in absolute liver weight (11%), relative liver weight (20%), absolute kidney weight (7%), relative brain weight (9%), and relative lung weight (8%) were seen compared to control. In females, significant increases in absolute kidney weight (7% and 7%) and relative kidney weight (8% and 6%) were seen at 100 and 500 mg/kg/day, respectively; and significant decreases in absolute and relative ovarian weight (11% and 11%, respectively) compared to control. No significant histological changes were seen in males or females in the 500 mg/kg/day group compared to control (only groups evaluated). The percentage of motile sperm, progressive motile sperm, and sperm counts were similar to control. In males, significant decreases in serum testosterone (46%), T3 (11%), T4 (21%) at 500 mg/kg/day and significant increases in serum FSH at 100 mg/kg/day (22%) and at 500 mg/kg/day (19%) were seen compared to control. In females, significant increases in serum prolactin (76%) and decreases in serum T4 (21%) at 500 mg/kg/day were seen compared to control. No significant differences in number of implantation sites/litter, mean number of pups/litter (at birth, born alive, PND4, PND21), sex ratio, and mean % born alive. Viability of F1 pups was significantly decreased from PND 0-4 (100% in control to 96.7% in 500 mg/kg/day group); no difference in pup viability was seen during PND 4-21 compared to control. Mean pup weights were significantly decreased on PND 0 in males (6% and 7%) and females (6% and 6%) at 100 and 500 mg/kg/day, respectively. Also, at 500 mg/kg/day, significant decreases in mean pup weights were seen in males on PND 14 (8%) and PND 21 (7%) and in females on PND 14 (8%) and PND 21 (7%) compared to control. Anogenital distance at birth was significantly decreased in F1 male pups (8%) and increased females pups in the 500 mg/kg/day group compared to control. No significant difference in landmarks for the development of neural reflexes were seen between the groups except the 100 mg/kg/day males had significant delay in the day in which cliff-drop aversion response was completed. Upper tooth eruption occurred earlier in the 500 mg/kg/day males, and in both sexes there was a significant delay in pinna opening (20 and 100 mg/kg/day groups) and eyelid opening (20 mg/kg/day group) compared to control (data not shown). No significant external or internal abnormalities were seen at PND 0, 4 or 22. Neither cryptorchidism nor hypospadias was observed in any exposed offspring. The following significant changes were seen in F1 male pups sacrificed on PND 22 in the 500 mg/kg/day group: significant decreases in terminal body weight (6%), absolute testis weight (12%), relative testis weight (6%), absolute epididymides weight (9%), and serum FSH (36%); and at 100 and 500 mg/kg/day, significant decreases in serum TSH (15% and 22%, respectively) compared to control. The following significant changes were seen at 500 mg/kg/day in F1 female pups sacrificed on PND 22: significant decrease in terminal body weight (9%), absolute ovary weight (16%), increase in relative uterus weight (13%); and at 100 and 500 mg/kg/day, significant decrease in serum T3 (17% and 33%, respectively) compared to control. Histological evaluation of reproductive organs found 9/10 F1 males in the 500 mg/kg/day group had decreased spermatocytes in the seminiferous tubule compared to 0/10 in control group. No other histological changes were seen in male or females F1 pups at PND22. After weaning on PND 22, F1 pups were exposed to BPP until necropsy. No deaths occurred after weaning, salivation was observed after daily administration. No other clinical signs of toxicity were observed. No significant difference in body weight gains from PND 21-91 were seen compared to control. From PND 23 to 24, food consumption was significant decreased in 500 mg/kg/day males and increased in the 20 mg/kg/day females. The day of preputial separation was significantly increased in F1 males (from PND 43.2 to PND 44.5); body weights at the time were comparable. No significant difference in day of vaginal opening was seen between the groups. No differences in estrous cycling (length or number of females with irregular cycles) were seen compared to control. In the panel of behavioral test conducted on post-weaned F1 offspring, no significant compound related effects were observed in the open-field activity or water multiple T-maze test in males and females compared to control. In the spontaneous motor activity test, significant increases in the number of wheel revolutions was seen in 500 mg/kg/day females (data not shown). In the animals necropsies at 10 weeks, no significant changes in reproductive organs were observed compared to control. In F1 rats, no differences in mating index, fertility index, gestation length or delivery index were seen compared to control. Body weight and food consumption of dams during gestation and lactation were similar (data not shown). In F1 males necropsied at 18-weeks of age, significant decreases in terminal body weights were seen at 100 mg/kg/day (7%) and 500 mg/kg/day (13%) compared to control. Also, in F1 males, significant decreases in absolute testes (12%), epididymides (21%), and spleen (12%) weights at 500 mg/kg/day; and absolute heart weight at 100 mg/kg/day (7%) and 500 mg/kg/day (12%) were seen compared to control. Also in F1 males, significant increases in relative lung (4%), liver (15%), thyroid (11%), and pituitary gland (11%) weight in the 500 mg/kg/day males; and relative kidney weight at 100 mg/kg/day (9%) and 500 mg/kg/day (18%) were seen compared to control; however the increase in relative organ weights may be a reflection of the decrease in body weight rather than an effect of the compound itself since absolute weights were not different. In F1 females necropsied after lactation (PND 22 of F2 pups) no significant differences in body weight, or absolute and relative organ weights were seen compared to control. In the 500 mg/kg/day F1 males sacrificed at 18-weeks, significant decreases in serum testosterone (43%), LH (21%) and T4 (21%) were seen compared to control. No differences in the percent of mobile sperm, progressive motile sperm or count were seen. In the F1 females sacrificed after lactation, no differences in serum hormones were observed compared to control. Histological examination of testis showed increased incidence of atrophy of the seminiferous tubules (6/10), decrease in germ cells in seminiferous tubules (4/10), edema in the interstitium (4/10), and decrease sperm in the epididymis (5/10) in the 500 mg/kg/day group; none of these changes were seen in the control or other dose groups. No compound-related histological changes were seen in F1 females. In F2 generation, no significant difference in number of implantation sites, pups born, birth index, sex ratios, viability indices on PND 0 and 21, and body weights of pups during lactation. No external abnormalities were seen

at PND 0, 4 or 21; and no internal abnormalities were seen at PND4 or 21. From the data, the study authors report an NOAEL of 20 mg/kg/day for reproductive effects on parent rats and the next generation.

³ 1359183: A one generation reproductive study was conducted in accordance with OECD 415 guidelines. Male (12/group) and female (24/group) Wistar rats were provided diets containing 0, 0.2, 0.4, or 0.8% butyl benzyl phthalate (BBP). Males were provided food containing BBP (purity 98.1%) ad libitum during the 10-week pre mating period, during mating and until sacrifice. Females were given food containing BBP ad libitum during the 2-weeks prior to mating, during gestation and lactation until sacrifice. Control animals were treated the same but with regular feed. After weaning the first litter, F0 males and females were mated again, generating two F1 litters. Study authors calculated doses during pre mating to be 0, 108, 206 and 418 mg/kg/day for males, and 0, 106, 217, and 446 mg/kg/day for females, respectively. Increased intake of BBP was seen in females during gestation: average of 0, 132, 235, and 458 mg/kg/day, and during lactation: 0, 251, 580, and 1078 mg/kg/day, respectively (intake from both pregnancies averaged from reported information by this Reviewer). During the exposure period, mortality, clinical signs and animal behavior were observed daily. Body weights and food consumption were measured weekly for males and for females weekly during pre mating and on GD 0, 7, 14, and 21 and PND 1, 7, 14, and 21. F0 males were sacrificed after the second mating and females after weaning of the second litter. Both litters were sacrificed on PND 21. Endpoints included gross pathology, liver weights histopathology (in control and 0.8% group only: ovaries, uterus [including cervix], vagina, testes, epididymides, seminal vesicles, prostate, coagulating glands, pituitary gland, liver, and other organs or tissues showing severe macroscopic abnormalities). Reproductive parameters (number of successful copulations, pregnant females, implantation sites, females surviving delivery, females giving birth to live pups, and females giving birth to stillborn pups, and duration of gestation) were all recorded. Litters were assessed for size, sex, abnormalities and weight (PND 1, 4 [before culling], 7, 14); pups were individually weight at PND 21. Three rats in the F0 generation were found moribund (1 control male; 1 control female; and 1 female in the 0.2% group). These deaths were not considered treatment related. No treatment related clinical signs or behavioral changes were observed. No dose-related significant difference in weekly body weights or body weight gains were seen in males compared to control. In females, significant dose-related decreases in body gains were significantly seen from GD 7-14 (18%), and PND 1-7 (54%) during first litter; and from GD 0-7 (24%), PND1-7 (49%), and PND 14-21 (79%) during litter 2 in the 0.8% group compared to control. Terminal body weights in females were not different from controls. Sporadic non-dose related changes in food consumption were seen in males. In females decreased food consumption was observed during gestation in the 0.8% group (7-11% during GD 0-14 both litters). No gross abnormalities were seen in the F0 parents at necropsy. No treatment related changes in liver weights were seen in males. Relative liver weight was increased 7% in the 0.8% group females, however no difference in absolute weight was seen. The toxicological relevance of this is unclear. No treatment related histological changes were observed. Significant decreases in precoital time (37% and 25%) were seen at 0.4% and 0.8% for the first litter, respectively compared to control but not in the second mating. Study authors consider this a chance event and not related to treatment since this effect was not seen in the second mating. No other significant treatment related changes in reproductive parameters were seen. No significant difference in litter size, sex or pup abnormalities were observed. On PND21, significant decreases in second litter body weights of males (11%) and females (12%) were seen compared to control; however study authors consider this a direct effect of diet intake by the pups and not developmental (pups began eating the diet directly at PND 14). The study authors report a NOAEL for parental toxicity of 0.4% (206 mg/kg/day for males and 217 mg/kg/day for females) and a NOAEL for reproductive performance and development of the offspring as 0.8% (418 mg/kg/day for males and 446 mg/kg/day for females). A NOAEL of 0.4% (217 mg/day) and a LOAEL of 0.8% (446 mg/day) was determined for females based on decreased body weight gains during pregnancy and lactation and decreased food consumption by this Reviewer.

⁴ 675462: In a U.S. EPA OPPTS 837.3800 guideline two-generation reproduction study, parental (F0) CD (SD) rats (30/sex/group) were exposed to BBP in the diet at 750, 3,750, or 11,250 ppm (equivalent to approximate intakes of 0, 50, 250, or 750 mg/kg-day) for two generations (one litter/generation). Exposure began 10 weeks (70 days) prior to mating, and through mating (14 days), gestation, and lactation (F0 females only). F0 males were sacrificed after the gestation period. After weaning, select F1 offspring (30/sex/group) were exposed via the diet in a similar manner to generate the F2 generation. All diets were within 90-110% of the target concentrations. Between the end of the pre-breeding period to the last week of lactation, consumption BBP ranged from 40-150, 180-760, and 590-2,330 mg/kg-day depending on age, body weight, and sex. Parental animals were monitored for mortality, clinical signs of toxicity, body weight, and feed consumption. Females were monitored for estrous cyclicity and normality. All reproductive indices (mating, fertility, gestational, pregnancy) were determined. Litter parameters included litter size, number of live and dead pups, and pup body weights (PND 0 and 4). Litters were culled and on PND4; sacrificed pups were necropsied. In other offspring, nipple and or areolae retention in males was assessed on PND 11-13. At weaning 30/sex/group were selected for mating, and the other offspring were sacrificed and necropsied. The same schedule was used for the F2 pups, with the final sacrifice being at the study end at the time of F2 weaning. Organ weights from necropsied pups and weanlings were restricted to the brain, spleen, thymus, ovaries, uterus, testes, epididymides, and seminal vesicles. In parental animals (F0 and F1), the kidneys, adrenal glands, liver, and prostate were also weighed. The number of primordial follicles was counted in females from the control and high-dose groups, and sperm analysis in males was conducted. Histopathology analysis was done on all reproductive tissues and on the adrenals, thyroid, liver, and kidneys of parental high-dose and control groups. Male reproductive organs, livers, and kidneys were also examined in mid and low-dose males. Males occurred in one low, and one high-dose F0 male, and one control and one low-dose female. In F1 animals, 1 F1 male at 750 ppm, and 2 males from each of the 3,750 ppm and 11,250 ppm groups died. During the pre-breeding period, overall, there were no notable effects on male F0 body weight gain or feed consumption (in g/day). However, F1 male body weights and feed consumption (g/day) were significantly decreased at 11,250 ppm throughout the pre-breeding and mating periods. Feed consumption (g/kg/day) was increased, and feed efficiency was unaffected. F0 and F1 females' body weights were significantly reduced at 12,250 ppm throughout the pre-breeding period, gestation, and to lactation day 14. Absolute and relative liver weights were significantly increased in F0 males (13% and 16%, respectively) and females (15% and 19%, respectively) at 11,250 ppm. In F1 males, absolute and relative liver weights were increased by 10% and 5.9%, compared to controls at 3,750 ppm. At 11,250 ppm, only relative liver weights were increased (16%). Kidney weights were statistically significantly increased by <10% in F0 males and females. In F1 animals, absolute and/or relative kidney weights were only increased at the mid-dose. Other weight changes (adrenal glands, brain, and pituitary in adult males were likely a reflection of decreased body weights in these animals. The only microscopic changes occurred in the liver. Incidences were 0, 0, 0, and 8 in F0 males, 1, 0, 2, and 9 in F0 females, and 0, 0, 0, 5 in F1 females in the control, 750, 3,750, and 11,250 ppm groups, respectively. No liver lesions were observed in F1 males. The lesions were described as "cytologic alteration, hepatic, minimal." There were no effects on reproductive function in F0 animals. In F1 males and females, the mating and fertility indices were significantly decreased at 11,250 ppm; the number of uterine implants was also reduced in the absence of any effects on ovarian primordial follicle counts. High-dose F1 parental females exhibited a reduced number of litters and a reduced number of total and live pups/litter at birth. Absolute (but not relative) testes, epididymides, seminal vesicles, and absolute and relative prostate weights were decreased also at the high dose. Paired ovaries and uterus weights were decreased in F0 and F1 females at 11,250 ppm and there was an increase in incidences of fluid-filled uteri. Additionally, F1 males exhibited decreased sperm counts, motility, progressive motility, and missing reproductive organs or parts of organs, aspermia, seminiferous tubule degeneration and atrophy, and testis dilation. Developmental effects included significantly decreased high-dose F1 pup body weights from birth through PND21 and F2 pup body weights from PND 7 through PND21, decreased anogenital distance in F1 and F2 pups at \geq 3,750 ppm, and an increase in the percentage and number of male F1 and F2 pups with nipples and the number of areolae per male at 11,250 ppm. There was a significant delay in the age of preputial separation and in vaginal patency in high-dose F1 males and females, respectively. Changes in F1 and F2 weanling organ weights at the high dose likely reflected the decrease in body weights and included decreased absolute (but not relative) thymus, epididymis, ovarian, and uterine weights, and changes in brain weights. Changes that may be treatment-related included decreases in absolute and relative spleen weights in both F1 and F2 weanlings of both sexes at 11,250 ppm, and reductions in male absolute and relative testes weights at the same dose (although absolute and relative testes weights were increased in F1 males at 3,750 ppm). 32.9% of F1 males and 24.17% of F2 males in the 11,250-ppm group showed gross reproductive organ malformations including undescended or small testis (F1) and missing or small epididymides (F1 and F2), or seminal vesicles (F2). The author reported toxicity values were as follows: The F0 and F1 parental systemic NOAEL = 3,750 ppm (equivalent to approximately 250 mg/kg-day), based on reduced body weights and weight gains, increased absolute and relative liver weights, and histopathology in the liver consistent with peroxisome proliferation. F1 (but not F0) parental reproductive toxicity NOAEL = 3,750 ppm (250 mg/kg-day), based on reduced mating and fertility indices, reduced number of implantations and total and live pups on PND0, reduced sperm counts and sperm motility, increased incidences of male reproductive tract malformations, and increased incidences of

gross and histopathologic lesions in the testes, epididymides, and prostate. The developmental toxicity NOAEL = 3,750 ppm (250 mg/kg-day) based on reduced pup body weights, decreased AGD, delayed acquisition of puberty, retention of nipples and areolae, and male reproductive system malformations. Although anogenital distance was significantly reduced at 3,750 ppm, the authors did not consider this to be adverse due to the lack of other effects on reproductive development, structures, or functions at that dose. Therefore, an F1 and F2 offspring reproductive toxicity NOEL of 750 ppm (50 mg/kg-day) was noted.

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Parent compound

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Lung function (FEV1, FVC, FEV1% predicted, FVC% predicted)	Health Effect: Lung/Respiratory- Spirometry measurements (FEV1, FVC, FEV1% predicted, FVC% predicted)- Non-cancer. Outcome measure: Spirometry	General public, Fenceline communities. Adults (18+), Older Adults (65+). Taiwan; Kaohsiung County. Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Older adults (age >= 65 years). Participants in the Dalinpu Community for Health Care cohort (2016-2018), Kaohsiung County, Taiwan, n=397 (159 men, 238 women). Dalinpu Community for Health Care (DCHC). 2016-2018.	Biomonitoring Biomonitoring matrix: Other (specify), forehead skin wipe Exposure Route: Dermal Absorption Acute (less than 24 hours) Exposure measured via forehead skin wide during cross-sectional study.	Linear Regression. Confounders adjusted for: age, gender, BMI, smoking, exercise, education.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (Beta) (95% CI) for a 1 log-unit increase in BBP:FVC, full study population: -0.09 (-0.16, -0.02)FVC% predicted, full study population: -3.48 (-5.60, -1.36)FVC, participants age >= 60: -0.26 (-0.47, -0.06)FVC% predicted, participants age >= 60: -11.25 (-18.32, -4.71)FEV1, participants age >= 60: -0.17 (-0.33, -0.01)FEV1% predicted, participants age >= 60: -10.31 (-18.02, -2.59). Significant inverse associations with FVC and FVC% predicted in all study participants and among participants age >= 60. Significant inverse associations with FEV1 and FEV1% predicted only among participants age >= 60..	Wang et. al 2021 7502437 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Obesity	Health Effect: Reproductive/Developmental- Body mass index-Non-cancer- Nutritional/Metabolic-Body mass index, fasting blood sugar-Non-cancer. Outcome measure: Direct measurement	General public. Middle childhood (6-11), Teens (12-17). Iran; Isfahan. Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Children and adolescents aged 6-18 living in the city of Isfahan, Iran (n=242). NR.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured concurrently with outcome.	Logistic Regression. Confounders adjusted for: age, physical activity, use of cosmetics, use of plastic packaging, use of bottled drinks, waist circumference, fasting blood sugar, total cholesterol, triglycerides, HDL-C, LDL-C, SBP, DBP.	Lowest exposure concentration for a significant adverse health outcome response: Tertiles [specific tertile ranges not provided; geometric mean (SD) MBzP = 173.18 (196.35) ug/L]. OR (95%) for obesity for T3 vs. T1 of MBzP = 5.54 (4.79, 6.28). Positive significant association between MBzP and obesity for T3 vs. T1. T2 vs. T1 positive but not significant. p-trend = 0.001.	Amin et. al 2018 4829277 Low
Low-HDL cholesterol	Health Effect: Cardiovascular-Blood pressure, HDL cholesterol, triglycerides-Non-cancer. Outcome measure: Direct measurement	General public. Middle childhood (6-11), Teens (12-17). Iran; Isfahan. Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Children and adolescents aged 6-18 living in the city of Isfahan, Iran (n=242). NR.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured concurrently with outcome.	Logistic Regression. Confounders adjusted for: age, physical activity, use of cosmetics, use of plastic packaging, use of bottled drinks, waist circumference, fasting blood sugar, total cholesterol, triglycerides, BMI, LDL-C, SBP, DBP.	Lowest exposure concentration for a significant adverse health outcome response: Tertiles [specific tertile ranges not provided; geometric mean (SD) MBzP = 173.18 (196.35) ug/L]. OR (95%) for low-HDL cholesterol for T3 vs. T1 of MBzP = 0.31 (0.09, 0.95). Negative significant association between MBzP and low-HDL cholesterol for T3 vs. T1. T2 vs. T1 negative but not significant. p-trend = 0.12.	Amin et. al 2018 4829277 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
High triglycerides	Health Effect: Cardiovascular-Blood pressure, HDL cholesterol, triglycerides-Non-cancer. Outcome measure: Direct measurement	General public. Middle childhood (6-11), Teens (12-17). Iran; Isfahan. Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Children and adolescents aged 6-18 living in the city of Isfahan, Iran (n=242). NR.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured concurrently with outcome.	Logistic Regression. Confounders adjusted for: age, physical activity, use of cosmetics, use of plastic packaging, use of bottled drinks, waist circumference, fasting blood sugar, total cholesterol, HDL-C, BMI, LDL-C, SBP, DBP.	Lowest exposure concentration for a significant adverse health outcome response: Tertiles [specific tertile ranges not provided; geometric mean (SD) MBzP = 173.18 (196.35) ug/L]. OR (95%) for high triglycerides for T3 vs. T1 of MBzP = 2.71 (1.23, 6.22). Positive significant association between MBzP and high triglycerides for T3 vs. T1. T2 vs. T1 positive but not significant. p-trend = 0.03.	Amin et. al 2018 4829277 Low
BMI z-score and waist circumference	Health Effect: Nutritional/Metabolic-Body mass index (BMI), waist circumference-Non-cancer- Reproductive/Developmental- Body mass index (BMI), waist circumference-Non-cancer. Outcome measure: Weight, height, and waist circumference measured during physical examination	General public. Middle childhood (6-11), Teens (12-17), Adults (18+). Iran; Isfahan. Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Children and adolescents age 6-18 living in Isfahan, Iran (n=242). 2016.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured in fasting morning urine samples after enrollment.	Multivariate Regression. Confounders adjusted for: sex, age, physical activity.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (p-value): MBzP and BMI z-score: 0.18 (0.002)MBzP and waist circumference: 0.22 (<0.001). Significant positive associations reported between MBzP and both BMI z-score and waist circumference..	Amin et. al 2018 4728682 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Anoclitoral distance	<p>Health Effect: Reproductive/Developmental-Anoclitoral distance (ACD), anofourchette distance (AFD), anopenile distance (APD), anoscrotal distance (ASD), second to fourth finger (2D:4D) digit ratio-Non-cancer.</p> <p>Outcome measure: Direct measurement from study research personnel</p>	<p>General public, Pregnant people. Infant (0-1), Adults (18+).</p> <p>Canada; Vancouver, Edmonton, Winnipeg, Sudbury, Toronto, Hamilton, Kingston, Ottawa, Montreal, Halifax.</p> <p>Female, Male.</p> <p>Cohort (Prospective). PESS: Lifestage, Other Chemical and Non-chemical stressors (ex. exposure to other substances that affect same organ as test chemical).</p> <p>Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months).</p> <p>Canadian women from Maternal-Infant Research on Environmental Chemicals (MIREC) cohort recruited during pregnancy and enrolled in follow up study (MIREC-ID) (analysis sample included 396 mother-child pairs). Maternal-Infant Research on Environmental Chemicals (MIREC) study. Recruitment: 2008-2011; Follow-up: 6 months after birth.</p>	<p>Biomonitoring Biomonitoring matrix: Urine</p> <p>Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear</p> <p>Maternal exposure measured during first trimester of pregnancy.</p>	<p>Linear Regression. Confounders adjusted for: Specific gravity, education, mother born in Canada, gestational age, maternal age, weight-for-length z score.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: continuous Geometric mean (95% CI) maternal MBzP = 5.15 (4.52-5.86) ug/L.</p> <p>Regression coefficient (95% CI) for per 1 ln-unit MBzP = -1.2401 (-1.9080, -0.5723).</p> <p>The anoclitoral distance (ACD) was significantly negatively associated with MBzP in females. Non-significant, inverse associations were reported for most other measures of AGD and 2D:4D ratio..</p>	<p>Arbuckle et. al 2018 4829228 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Child age 11 motor function	<p>Health Effect: Neurological/Behavioral-Age 11 motor skills-Non-cancer.</p> <p>Outcome measure: Short form of the Bruininks- Oseretsky Test of Motor Proficiency, 2nd edition (BOT-2)</p>	<p>Pregnant people.</p> <p>Preschool (3-5), Middle childhood (6-11), Adults (18+).</p> <p>U.S.; New York City, northern Manhattan, South Bronx.</p> <p>Female,</p> <p>Male.</p> <p>Cohort (Prospective).</p> <p>PESS: Lifestate , Sociodemographic Status (ex. race/ethnicity, socioeconomic).</p> <p>Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years).</p> <p>Columbia Center for Children's Environmental Health (CCCEH) (recruitment 1999-2006, follow-up through age 11), United States, New York, overall n=209 mother-child pairs (116 girls, 93 boys). Sample size for the relevant metabolites varied based on measurement time point in children.. Columbia Center for Children's Environmental Health (CCCEH) cohort. Recruitment: delivery 1999-2006 and 3rd trimester spot urine; Follow-up child age 11 year visit..</p>	<p>Biomonitoring</p> <p>Biomonitoring matrix: Urine</p> <p>Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear</p> <p>Exposure measured during pregnancy third trimester.</p>	<p>Linear Regression. Confounders adjusted for: prenatal specific gravity, maternal ethnicity, prenatal maternal demoralization, prenatal maternal alcohol consumption, quality of the home environment (HOME score), child BMI z-score at age 11, and child's age in months at BOT-2 administration.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: continuous. Among girls, the BOT-2 total composite score was lower with higher prenatal concentrations of ln MBzP ($b = -1.14$; [95%CI: -2.13, -0.14]). Among boys, BOT-2 fine motor composite score was associated inversely with prenatal concentrations of ln MBzP ($b = -0.79$; 95% CI: [-1.40, - 0.19]). Among girls, the adjusted BOT-2 total composite score was lower with higher prenatal concentrations of ln (MBzP). Among boys, BOT-2 fine motor composite scores was associated inversely with prenatal concentrations of ln (MBzP). No other significant associations with prenatal ln (MBzP). In contrast to prenatal phthalate results, none of the child MBzP phthalates were associated with BOT-2 scores..</p>	<p>Balalian et. al 2019 5039985 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

...continued from previous page

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Child age 11 motor function	Health Effect: Neurological/Behavioral- Age 11 motor skills-Non- cancer. Outcome measure: Short form of the Bruininks- Os- eretsky Test of Motor Profi- ciency, 2nd edition (BOT-2)	Pregnant people. Preschool (3-5), Middle childhood (6-11), Adults (18+). U.S.; New York City, north- ern Manhattan, South Bronx. Female, Male. Cohort (Prospective). PESS: Lifestate , Sociodemographic Status (ex. race/ethnicity, socioeco- nomic). Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Columbia Center for Chil- dren's Environmental Health (CCCEH) (recruitment 1999-2006, follow-up through age 11), United States, New York, overall n=209 mother-child pairs (116 girls, 93 boys). Sam- ple size for the relevant metabolites varied based on measurement time point in children.. Columbia Center for Children's Environmen- tal Health (CCCEH) cohort. Recruitment: delivery 1999- 2006 and 3rd trimester spot urine; Follow-up child age 11 year visit..	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy third trimester.	Linear Regression. Con- founders adjusted for: prenatal specific gravity, maternal ethnicity, pre- natal maternal demoral- ization, prenatal maternal alcohol consumption, quality of the home envi- ronment (HOME score), child BMI z-score at age 11, and child's age in months at BOT-2 adminis- tration.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Among girls, the BOT-2 total composite score was lower with higher prenatal concentrations of ln MBzP ($b = -1.14$; [95%CI: -2.13, -0.14]). Among boys, BOT-2 fine motor composite score was asso- ciated inversely with prenatal concentrations of ln MBzP ($b = -0.79$; 95% CI: [-1.40, - 0.19]). Among girls, the adjusted BOT-2 total composite score was lower with higher prenatal concentrations of ln (MBzP). Among boys, BOT-2 fine motor com- posite scores was associated inversely with prenatal concentrations of ln (MBzP). No other significant associations with prenatal ln (MBzP). In contrast to prenatal phthalate results, none of the child MBzP phthalates were associated with BOT-2 scores..	Balalian et. al 2019 5039985 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Age at thelarche (months)	Health Effect: Reproductive/Developmental- Timing of puberty (thelarche)-Non-cancer. Outcome measure: Clinical Tanner staging assessment	General public. Middle childhood (6-11), Teens (12-17), Adults (18+). United States; Salinas Valley, California. Female. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters. Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Mothers and their children from the CHAMACOS study (n=159 boys; n=179 girls). The Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS). Recruitment: 1999-2000; Follow-up 9-13 years later.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Multivariable accelerated failure time (AFT). Confounders adjusted for: maternal education, years in United States, family poverty during pregnancy, Diet Quality Index during pregnancy, maternal prepregnancy BMI.	Lowest exposure concentration for a significant adverse health outcome response: continuous; median = 9.2 ng/mL. Mean shift in months (95% CI) per log2 increase in MBzPAll girls: 1.9 (0.2, 3.6) Overweight/obese girls: 3.9 (1.2, 6.7). Significant positive association for all girls, and for overweight/obese girls in stratified analyses. p for interaction = 0.58.	Berger et. al 2018 4829221 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Age at go-nadarche (months)	Health Effect: Reproductive/Developmental-Timing of puberty (pubarche, menarche, gonadarche)-Non-cancer. Outcome measure: Clinical Tanner staging assessment	General public. Middle childhood (6-11), Teens (12-17), Adults (18+). United States; Salinas Valley, California. Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters. Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Mothers and their children from the CHAMACOS study (n=159 boys; n=179 girls). The Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS). Recruitment: 1999-2000; Follow-up 9-13 years later.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Multivariable accelerated failure time (AFT). Confounders adjusted for: maternal education, years in United States, family poverty during pregnancy, Diet Quality Index during pregnancy, maternal prepregnancy BMI.	Lowest exposure concentration for a significant adverse health outcome response: continuous; median = 9.2 ng/mL. Mean shift in months (95% CI) per log2 increase in MBzPAll boys: -3.1 (-5.2, -0.9) Overweight/obese boys: -4.3 (-6.8, -1.8). Significant negative association for all boys, and for overweight/obese boys in stratified analyses. p for interaction = 0.07.	Berger et. al 2018 4829221 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Age at pubarche (months)	Health Effect: Reproductive/Developmental- Timing of puberty (pubarche, menarche, gonadarche)-Non-cancer. Outcome measure: Clinical Tanner staging assessment	General public. Middle childhood (6-11), Teens (12-17), Adults (18+). United States; Salinas Valley, California. Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters. Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Mothers and their children from the CHAMACOS study (n=159 boys; n=179 girls). The Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS). Recruitment: 1999-2000; Follow-up 9-13 years later.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Multivariable accelerated failure time (AFT). Con- founders adjusted for: maternal education, years in United States, family poverty during pregnancy, Diet Quality Index during pregnancy, maternal prepregnancy BMI.	Lowest exposure concentration for a significant ad- verse health outcome response: continuous; median = 9.2 ng/mL. Mean shift in months (95% CI) per log2 increase in MBzPNormal weight boys: 3.5 (0.4, 6.5)Over- weight/obese boys: -3.6 (-5.7, -1.4)Non-significant, near-zero results for girls.. Significant negative association for boys when stratified by weight status, but non-significant negative in all boys. p for interaction = <0.01.	Berger et. al 2018 4829221 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Small-for-gestational-age	Health Effect: Reproductive/Developmental- Small for gestational age (SGA), Birth weight for gestational age z-scores (Z-BW), Preterm birth (PTB), Low birth weight (LBW)-Non-cancer. Outcome measure: Medical Records	Pregnant people. Infant (0-1), Adults (18+). United States; Charleston, South Carolina metropolitan area. Female, Male. Cohort (Prospective). PESS: Lifestage , Sociodemographic Status (ex. race/ethnicity, socioeconomic). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months). Pregnant women and their children in South Carolina (n=310; African-American n=152; White n=158). 2011-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy prior to birth outcomes.	Logistic Regression. Confounders adjusted for: maternal age, BMI, education, smoking in pregnancy, race.	Lowest exposure concentration for a significant adverse health outcome response: 2nd Tertile (range not provided). OR (95% CI) for exposure measured during GW 18-22:T2 vs. T1: 0.30 (0.10 - 0.85)T3 vs. T1: 0.29 (0.10 - 0.81)OR (95% CI) for exposure measured during GW 24-32:T2 vs. T1: 0.32 (0.06 - 1.68)T3 vs. T1: 0.29 (0.05 - 1.58). Significant negative associations were reported for all tertiles of MBzP and SGA. Negative, non-consistent associations were observed for all other birth outcomes and no significant findings were reported by race..	Bloom et. al 2019 5494469 High

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Language delay	Health Effect: Neurological/Behavioral-Language delay-Non-cancer. Outcome measure: Questionnaire	General public. Toddler (2-3). SELMA: Sweden; TIDES: US; SELMA: county of Värmland; TIDES: University of Minnesota Medical Center [Minneapolis], University of California-San Francisco Clinical Center [San Francisco], University of Rochester Medical Center [Rochester, New York], and Seattle Children's Hospital, University of Washington [Seattle]). Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). SELMA: Swedish women and their offspring (Women enrolled n=2582; children used in analysis n=963); TIDES: US women and their offspring (Women enrolled n=969; children used in analysis n=370). Swedish Environmental Longitudinal Mother and Child, Asthma and Allergy (SELMA) study; The Infant Development and the Environment Study (TIDES). Recruitment: 2007-2010 (SELMA, 2010-2012 (TIDES); Data collection: 2007-2013 (SELMA), 2010-2016 (TIDES); Analysis: 2016-2018 (SELMA), 2016-2018 (TIDES).	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured via biomonitoring during <13 weeks of pregnancy.	Logistic Regression. Confounders adjusted for: SELMA: creatinine level in urine, sex, preterm birth, mother's educational level, mother's smoking status, mother's weight at study enrollment; TIDES: urinary-specific gravity, sex, preterm birth, mother's educational level, mother's race/ethnicity, mother's smoking status, mother's weight at study enrollment.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR (95% CI) for SELMA: 1.26 (1.07-1.49)Sex-specific resultsSELMA Boys: 1.39 (1.13-1.71); Girls: 1.04 (0.76-1.41). Significant positive associations between MBzP exposure and language delay in SELMA children. In SELMA, boys were significantly more likely to experience language delay than girls..	Bornehag et al 2018 5043345 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Gestational Age at Delivery	Health Effect: Reproductive/Developmental- Gestational age at delivery- Non-cancer. Outcome measure: Medical Records	Pregnant people. Infant (0-1), Adults (18+). United States; Boston, MA. Female, Male. Nested Case-Control. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months). Pregnant women with prenatal visits at clinics in the Boston area (n=130 preterm infants, n=352 term infants). Recruitment: 2006 - 2008.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured in repeated samples collected during pregnancy.	Cox Proportional Hazards Model. Confounders adjusted for: specific gravity, maternal age, race, education, private vs. public health insurance.	Lowest exposure concentration for a significant adverse health outcome response: continuous. OR (95% CI) per IQR increase in mean MBzP: 1.15 (1.03, 1.27). Significant increases in shorter time to delivery were associated with MBzP using Cox regression. Similar associations were observed using Logistic regression models to analyze odds of preterm birth. Accelerated Failure Time model results were not significant..	Boss et. al 2018 4728664 Medium
Age at pubertal onset	Health Effect: Reproductive/Developmental- age at pubertal onset (as measured by testicular volume, genitalia Tanner stage, and pubarche Tanner stage)-Non-cancer. Outcome measure: Clinical examinations	General public. Teens (12-17), Adults (18+). Russia; Chapaevsk. Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters. Lifestage PESS: Adolescents (age 11 years through < 21 years). 304 boys recruited at ages 8-9 for the Russia Children's Study,. Russia Children's Study. Recruitment: 2003-2005; Follow-up to 18-19 years.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured prepubertally at ages 8-9.	Interval-censored model. Confounders adjusted for: prenatal maternal alcohol intake, urinary specific gravity.	Lowest exposure concentration for a significant adverse health outcome response: 6.13–15.11 ng/mL. Testicular volume >3mLMean shift in months (95% CI):Q3 vs. Q1: 5.6 (0.3, 11.0)Q4 vs. Q1: 5.6 (0.6, 10.7)p-trend = 0.006Genitalia stage >= 2Mean shift in months (95% CI):Q4 vs. Q1: 7.5 (1.1, 13.8)p-trend = 0.02Pubarche stage >= 2Mean shift in months (95% CI):Q3 vs. Q1: 15.1 (8.0 - 22.2)Q4 vs. Q1: 14.2 (7.4 - 21.0)p-trend < 0.001. Later pubertal onset was associated with the fourth quartile of MBzP exposure when measured by testicular volume, genitalia stage, or pubarche stage. The same results were found for the 3rd quartile of MBzP when measured by testicular volume and pubarche stage..	Burns et. al 2022 10294569 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Renal function parameters (albumin-to- creatinine ratio (ACR), beta2-microglobulin microglobulin (B2M), N-acetyl-beta-d- glucosaminidase (NAG))- Non-cancer.	Health Effect: Renal/Kidney-Renal function parameters (albumin-to-creatinine ratio (ACR), beta2-microglobulin (B2M), N-acetyl-beta-d-glucosaminidase (NAG))-Non-cancer. Outcome measure: Single spot urine samples	General public. Adults (18+), Older Adults (65+). China; Shanghai. Female, Male. Cross-Sectional. PESS: . Adult participants in the Shanghai Food Consumption Survey with complete information on demographic characteristics and health status and sufficient urine samples (n=1663). Shanghai Food Consumption Survey (SHFCS). 2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured in single spot urine sample during 2012 cycle of the Shanghai Food Consumption Survey.	Linear Regression. Confounders adjusted for: age, sex, ethnicity, education, occupation, physical activity, marital status, smoking status, drinking, BMI, diabetes, systolic blood pressure, diastolic blood pressure, nutrients.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI) for albumin to creatinine ratio (ACR):MBzP: 0.060 (0.040, 0.081)Regression coefficient (95% CI) for beta2-microglobulin (B2M): MBzP: 0.099 (0.069, 0.128)Regression coefficient (95% CI) for N-acetyl beta-d-glucosaminidase (NAG):MBzP: 0.080 (0.064, 0.095). Significant positive associations between MBzP and all renal function outcomes. Results were similar in analyses where outcomes were dichotomized, as well as in dichotomized analyses where the outcome was potentially impaired renal function (PIRF, defined as at least one parameter above the 90th percentile)..	Chen et. al 2019 5041222 Medium
Time from ovulation to implantation, hCG rise, type of corpus luteum “rescue” (sustained ovarian progesterone production)	Health Effect: Reproductive/Developmental-Early pregnancy outcome measures: time from ovulation to implantation, pattern of human chorionic gonadotropin (hCG) hormone rise (an early indicator of pregnancy), and type of ovarian corpus luteum “rescue” (timing and pattern of ovarian progesterone rise, necessary for maintaining an early pregnancy)-Non-cancer. Outcome measure: Urinary measures of major metabolites of estrogen (estrone 3-glucuronide (E1G)) and progesterone (pregnanediol 3-glucuronide (PdG), along with human chorionic gonadotropin (hCG) hormone.	Pregnant people. Adults (18+). United States; North Carolina. Female. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). 137 healthy women without known fertility problems in the North Carolina Early Pregnancy Study, 1982-1986. Women enrolled from the time they discontinued birth control and followed for up to 6 months for the occurrence of a clinical pregnancy.. North Carolina Early Pregnancy Study (EPS). 1982-1986.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Short-term (between 24 hours and less than 28 days) Exposure measured during the conception cycle.	Linear Regression. Confounders adjusted for: None (considered but excluded age, smoking status, BMI).	Lowest exposure concentration for a significant adverse health outcome response: >32.2 ng/mg creatinine. Elevated MBzP (above the median) was associated with a significantly faster rate of hCG rise (p=0.04) [Figure 1, quantitative effect estimates not shown]..-Elevated MBzP (above the median) was associated with a significantly faster rate of hCG rise (p=0.04).-Time from ovulation to implantation and type of corpus luteum rescue were not significantly associated with MBzP..	Chin et. al 2019 5043528 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Absolute difference in TT3/TT4 Ratio	Health Effect: Thyroid-Thyroid function: total tri-iodothyronine (TT3), total thyroxine (TT4), TT3:TT4 ratio, thyroid stimulating hormone (TSH), thyroid peroxidase autoantibodies (TPOAb)-Non-cancer. Outcome measure: Thyroid function markers measured in plasma	Patients in clinics, Pregnant people. Adults (18+). Norway. Female. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Women who had a singleton birth and lived close to Oslo (Enrolled n=33050; Used in analysis n=473). Norwegian Mother, Father, and Child Cohort (MoBa). 2004-2008.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during a routine prenatal ultrasound visit.	Generalized linear mixed model. Confounders adjusted for: year, dietary selenium, dietary iodine, parity, depression, season of urine collection, education, age, smoking during pregnancy.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta coefficient (95% CI) for change in TT3/TT4 per IQR increase in MBzP: -0.08 (-0.40, 0.25). Non-significant association between MBzP and the absolute difference in TT3/TT4 levels. The authors also reported similar results from BKMR analyses..	Choi et. al 2021 7978495 Medium
Absolute difference in TT3 (ng/dL)	Health Effect: Thyroid-Thyroid function: total tri-iodothyronine (TT3), total thyroxine (TT4), TT3:TT4 ratio, thyroid stimulating hormone (TSH), thyroid peroxidase autoantibodies (TPOAb)-Non-cancer. Outcome measure: Thyroid function markers measured in plasma	Patients in clinics, Pregnant people. Adults (18+). Norway. Female. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Women who had a singleton birth and lived close to Oslo (Enrolled n=33050; Used in analysis n=473). Norwegian Mother, Father, and Child Cohort (MoBa). 2004-2008.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during a routine prenatal ultrasound visit.	Generalized linear mixed model. Confounders adjusted for: year, dietary selenium, dietary iodine, parity, depression, season of urine collection, education, age, smoking during pregnancy.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta coefficient (95% CI) for change in TT3 per IQR increase in MBzP: 2.43 (-1.28, 6.14). Non-significant association between MBzP and the absolute difference in TT3 levels. The authors also reported similar results from BKMR analyses..	Choi et. al 2021 7978495 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Absolute difference in TT4 (ug/dL)	Health Effect: Thyroid- Thyroid function: total tri-iodothyronine (TT3), total thyroxine (TT4), TT3:TT4 ratio, thyroid stimulating hormone (TSH), thyroid peroxidase autoantibodies (TPOAb)-Non-cancer. Outcome measure: Thyroid function markers measured in plasma	Patients in clinics, Pregnant people. Adults (18+). Norway. Female. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Women who had a singleton birth and lived close to Oslo (Enrolled n=33050; Used in analysis n=473). Norwegian Mother, Father, and Child Cohort (MoBa). 2004-2008.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during a routine prenatal ultrasound visit.	Generalized linear mixed model. Confounders adjusted for: year, dietary selenium, dietary iodine, parity, depression, season of urine collection, education, age, smoking during pregnancy.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta coefficient (95% CI) for change in TT4 per IQR increase in MBzP: 0.18 (-0.01, 0.38). Non-significant association between MBzP and the absolute difference in TT4 levels. The authors also reported similar results from BKMR analyses..	Choi et. al 2021 7978495 Medium
Absolute difference in TSH (mU/L)	Health Effect: Thyroid- Thyroid function: total tri-iodothyronine (TT3), total thyroxine (TT4), TT3:TT4 ratio, thyroid stimulating hormone (TSH), thyroid peroxidase autoantibodies (TPOAb)-Non-cancer. Outcome measure: Thyroid function markers measured in plasma	Patients in clinics, Pregnant people. Adults (18+). Norway. Female. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Women who had a singleton birth and lived close to Oslo (Enrolled n=33050; Used in analysis n=473). Norwegian Mother, Father, and Child Cohort (MoBa). 2004-2008.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during a routine prenatal ultrasound visit.	Generalized linear mixed model. Confounders adjusted for: year, dietary selenium, dietary iodine, parity, depression, season of urine collection, education, age, smoking during pregnancy.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta coefficient (95% CI) for change in TSH per IQR increase in MBzP: -0.02 (-0.14, 0.10). Non-significant association between MBzP and the absolute difference in TSH levels. The authors also reported similar results from BKMR analyses..	Choi et. al 2021 7978495 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Executive Function, Behavior and Cognition	Health Effect: Neurological/Behavioral-Executive function symptoms-Non-cancer. Outcome measure: Parent and teacher ratings and a one-day clinical exam (standardized assessment tools used included BRIEF-P, Stanford-Binet IV short version, NEPSY, CDT)	General public, Pregnant people. Preschool (3-5). Norway. Female, Male. Cohort (Prospective). PESS: Lifestage , Pre-existing Disease (ex. altered metabolism, behaviors, treatments related to condition). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Children aged 3-5 years in a sub-study of a prospective birth cohort, selected to include a group with high and another with low ratings for ADHD-like symptoms on standardized questionnaires. MoBa (Norwegian Mother, Father, and Child Cohort) birth cohort. Children born after April 1, 2004; Follow-up at age 3-4 years.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Linear Regression. Confounders adjusted for: maternal ADHD, BMI, age at delivery, parity, childbirth year, and child sex, specific gravity, and analytic batch effect.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta (95% CI) for change in scores per IQR increase in MBzP. 1. Behavior Rating Inventory of Executive Function-Preschool (BRIEF-P): -Emotional control, teacher rating: 1.23 (0.31, 2.15). -Working memory, teacher rating: 1.13 (0.14, 2.13). -Emotional control, parent rating: 1.67 (0.89, 2.45); boys = 2.51 (1.47, 3.55), girls = 0.67 (-0.46, 1.81) sex int. p=0.02. -Inhibition, parent rating: 1.00 (0.03, 1.98); boys = 1.50 (0.20, 2.81), girls = 0.41 (-1.02, 1.83), sex int. p=0.26. -Working memory, parent rating: overall ns; boys = 1.52 (0.14, 2.90), girls = 0.88 (-0.62, 2.39), sex int. p=0.53. 2. Clinic assessments (Stanford-Binet [SB5], Cookie Delay Task [CDT] or NEPSY statue task: -Non-verbal working memory, SB5: 0.19 (0.09, 0.28); boys = 0.14 (0.01, 0.27), girls = 0.24 (0.09, 0.38), sex int. p=0.32. -Verbal working memory, SB5: 0.13 (0.01, 0.25); boys = 0.17 (0.03, 0.31), girls = 0.03 (-0.18, 0.25), sex int. p=0.28. -Inhibition, NEPSY: 0.18 (0.08, 0.28); boys = 0.09 (-0.04, 0.23), girls = 0.27 (0.13, 0.42), sex int. p=0.07.. Prenatal MBzP was significantly associated with higher parent and teacher ratings of preschool executive function and cognition, including poorer emotional control, working memory, and inhibition. Associations were stronger among boys for parent-reported emotional control. Higher MBzP was also associated with poorer ratings for clinical assessments of executive function and cognition, including working memory (verbal and non-verbal) and inhibition..	Choi et. al 2021 8010273 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
fasting glu- cose, fasting insulin, HbA1c, HOMA-IR, HOMA-beta	Health Effect: Nutritional/Metabolic- Measures of glucose and insulin metabolism among individuals without diag- nosed diabetes: fasting glu- cose, fasting insulin, gly- cated hemoglobin (HbA1c), homeostasis model assess- ment for insulin resistance (HOMA-IR), homeostasis model assessment for beta cell function (HOMA- β)- Non-cancer. Outcome measure: Fasting serum samples	General public. Teens (12-17), Adults (18+), Older Adults (65+). Canada. Female, Male. Cross-Sectional. PESS: . 2,119 participants between 12 and 79 years old without self-reported diagnosed diabetes. Canadian Health Measures Survey (CHMS), cycle 2 (2009–2011). 2009–2011.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure and outcome mea- sured concurrently.	Linear Regression. Con- founders adjusted for: age, sex, ethnicity, uri- nary creatinine, cigarette smoking, alcohol use, and physical exercise.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta (95% CI) per 1 IQR increase MBzP for fasting glucose = 0.03(0.02, 0.05).. Urinary MBzP was associated with a significant increase fasting glucose..	Dales et. al 2018 4728651 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Conners' Parent Rating Scale (CPRS) scores: 7 factors cognitive prob-Neurological/Behavioral-problems/inattention, hyperactivity, anxious/shy, perfectionism, social problems, and psychosomatic.	Health Effect: Reproductive/Developmental-Child behavior at 7 years of age (assessed using the Conners' Parent Rating Scale-Revised: Long Form (CPRS) and oppositional, Child Behavior Checklist (CBCL))-Non-cancer. Neurological/Behavioral-problems/inattention, Child behavior at 7 years of age (assessed using the Conners' Parent Rating Scale-Revised: Long Form (CPRS) and Child Behavior Checklist (CBCL))-Non-cancer. Outcome measure: Parent assessment using comprehensive standardized checklist resulting in score	General public, Pregnant people, Infant (0-1), Toddler (2-3), Preschool (3-5), Adults (18+). United States; New York City (Northern Manhattan and South Bronx). Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters, Sociodemographic Status (ex. race/ethnicity, socioeconomic). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). African American or Dominican women from the Columbia Center for Children's Environmental Health recruited during pregnancy (analysis sample included 322 mother-child pairs). Columbia Center for Children's Environmental Health (CCEH). Recruitment: 1998-2006; Follow-up: NR (child at age 3, child at age 5).	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during third trimester of pregnancy; child exposure measured at 3 years and 5 years.	Poisson Regression. Confounders adjusted for: maternal race/ethnicity, maternal demoralization at child age 7 years, child age at time of CPRS or CBCL assessment, prenatal specific gravity, CAARS inattention/memory.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Mean Ratio (95% CI) per 1 log10 unit increase for following internalizing behaviors in CPRS at age 7 years among boys. MBzP, anxious-shy behavior = 1.20 (1.05-1.36). Mean Ratio (95% CI) per 1 log10 unit increase for following internalizing behaviors in CPRS at age 7 years among girls. MBzP, perfectionism = 1.15 (1.01-1.30). Mean Ratio (95% CI) per 1 log10 unit increase for following externalizing behaviors in CPRS at age 3 years among girls. MBzP, oppositional problems = 1.12 (1-1.24); MBzP, cognitive = 1.15 (1.02-1.28); MBzP, impulsivity = 1.11 (1-1.23); MBzP, ADHD index = 1.16 (1.04-1.3). Mean Ratio (95% CI) per 1 log10 unit increase for following internalizing behaviors in CPRS at age 3 years among girls. MBzP, social problems = 1.24 (1.03-1.48). MBzP was associated with anxious-shy behavior in boys and higher scores of perfectionism among girls. MBzP was associated with increased oppositional, cognitive, impulsivity, ADHD index problems and greater social problem scores..	Daniel et. al 2020 8204339 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Child Behavior Checklist (CBCL)	Health Effect: Reproductive/Developmental- Child behavior at 7 years of age (assessed using the Conners' Parent Rating Scale-Revised: Long Form (CPRS) and Child Behavior Checklist (CBCL))-Non-cancer-Neurological/Behavioral-Child behavior at 7 years of age (assessed using the Conners' Parent Rating Scale-Revised: Long Form (CPRS) and Child Behavior Checklist (CBCL))-Non-cancer. Outcome measure: Score obtained using 118 Likert-point items with 9 subscales: anxious/depressed, withdrawn/depressed, somatic problems, thought problems, attention problems, rule-breaking behavior, aggressive behavior and other problems	General public, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Adults (18+). United States; New York City (Northern Manhattan and South Bronx). Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters, Sociodemographic Status (ex. race/ethnicity, socioeconomic). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). African American or Dominican women from the Columbia Center for Children's Environmental Health recruited during pregnancy (analysis sample included 322 mother-child pairs). Columbia Center for Children's Environmental Health (CCEH). Recruitment: 1998-2006; Follow-up: NR (child at age 3, child at age 5).	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during third trimester of pregnancy; child exposure measured at 3 years and 5 years.	Poisson Regression. Confounders adjusted for: maternal race/ethnicity, maternal demoralization at child age 7 years, child age at time of CPRS or CBCL assessment, prenatal specific gravity, CAARS inattention/memory.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Authors note that prenatal exposure to MBzP was associated with somatic and withdrawn personalities among girls (MEAN RATIOS FOR MBzP ARE NOT SIGNIFICANT IN APPENDICES). Authors note that prenatal exposure to MBzP was associated with somatic and withdrawn personalities among girls (MEAN RATIOS FOR MBzP ARE NOT SIGNIFICANT IN APPENDICES).	Daniel et. al 2020 8204339 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Fine motor skills	<p>Health Effect: Neurological/Behavioral-fine and gross motor function at age 11-Non-cancer- Reproductive/Developmental-fine and gross motor function at age 11-Non-cancer.</p> <p>Outcome measure: Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2, short version)</p>	<p>General public, Pregnant people. Middle childhood (6-11), Adults (18+).</p> <p>United States; Northern Manhattan and South of the Bronx.</p> <p>Female, Male.</p> <p>Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years).</p> <p>209 mother-child pairs from the CCCEH study (female children n = 116; male children n = 93). Columbia Center for Children's Environmental Health (Mother and Child Study) (CCCEH). 1999-2006.</p>	<p>Biomonitoring Biomonitoring matrix: Urine</p> <p>Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear</p> <p>Exposure measured during pregnancy.</p>	<p>Weighted quartile sum regression. Confounders adjusted for: child age, child BMI z-score at time of BOT-2 performance, maternal race, prenatal alcohol consumption, maternal demoralization score, HOME score, urine specific gravity.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI): -2.57 (-4.16, -0.97). Among females, significant negative association for non-DEHP metabolites (MBP, MIBP, MBzP) in WQS regression. Weight of MBzP appears to be just over 0.2 in WQS model..</p>	<p>Daniel et. al 2020 6957610 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Gross motor skills	Health Effect: Neurological/Behavioral-fine and gross motor function at age 11-Non-cancer- Reproductive/Developmental-fine and gross motor function at age 11-Non-cancer. Outcome measure: Bruininks-Oseretsky Test of Motor Proficiency-2 (BOT-2, short version)	General public, Pregnant people. Middle childhood (6-11), Adults (18+). United States; Northern Manhattan and South of the Bronx. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). 209 mother-child pairs from the CCCEH study (female children n = 116; male children n = 93). Columbia Center for Children's Environmental Health (Mother and Child Study) (CCCEH). 1999-2006.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Linear Regression. Confounders adjusted for: child age, child BMI z-score at time of BOT-2 performance, maternal race, prenatal alcohol consumption, maternal demoralization score, HOME score, urine specific gravity.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI): -0.85 (-1.49, -0.20). Among females, significant negative association for non-DEHP metabolites (MBP, MIBP, MBzP) in linear regression. No significant findings for fine motor functions or among males..	Daniel et. al 2020 6957610 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Falling below developmental expectations based on the Ages and Stages Questionnaires-3 (ASQ-3), scores that fell into Gray (infant developing in the borderline of expectations) or Black (infant performance below expectations) domains (communication, gross motor, fine motor, problem solving, personal-social.-Non-cancer-Neurological/Behavioral-Delayed development based on the Ages and Stages Questionnaires-3 (ASQ-3), scores that fell into Gray (infant developing in the borderline of expectations) or Black (infant performance below expectations) areas in at least one of the following domains - communication, gross motor, fine motor, problem solving, personal-social.-Non-cancer. Outcome measure: Ages and Stages Questionnaire Edition 3	Health Effect: Reproductive/Developmental-Delayed development based on the Ages and Stages Questionnaires-3 (ASQ-3), scores that fell into Gray (infant developing in the borderline of expectations) or Black (infant performance below expectations) areas in at least one of the following domains - communication, gross motor, fine motor, problem solving, personal-social.-Non-cancer-Neurological/Behavioral-Delayed development based on the Ages and Stages Questionnaires-3 (ASQ-3), scores that fell into Gray (infant developing in the borderline of expectations) or Black (infant performance below expectations) areas in at least one of the following domains - communication, gross motor, fine motor, problem solving, personal-social.-Non-cancer. Outcome measure: Ages and Stages Questionnaire Edition 3	General public. Infant (0-1), Adults (18+). China; Shanghai. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Infants (birth through < 12 months). Mother-infant pairs from three districts in Shanghai, China (enrolled n=154 pairs; used in analysis n=138). March-May 2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at baseline (infant age ranged from 1 to 9 months) and at follow-up (infant age 9 months).	Logistic Regression. Confounders adjusted for: age, sex, BMI, feeding pattern.	Lowest exposure concentration for a significant adverse health outcome response: continuous. MBzP (OR (95% CI))Gross motor: 1.89 (1.17, 3.05)Combined (below expectations in at least one of the above domains): 1.77 (1.16, 2.71). Significant positive associations between MBzP and ASQ-3 scores below expectations were reported for the gross motor developmental domain..	Dong et. al 2019 5559180 High

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Falling be- low devel- opmental expectations based on the Ages and Stages Ques- tionnaires Edition 3 domains (commu- nication, gross motor, fine motor, problem solving, and personal- social)	Health Effect: Reproductive/Developmental- Delayed development based on the Ages and Stages Questionnaires-3 (ASQ-3), scores that fell into Gray (infant developing in the borderline of expectations) or Black (infant performance below expectations) areas in at least one of the following domains - communication, gross motor, fine motor, problem solving, personal-social.-Non-cancer- Neurological/Behavioral- Delayed development based on the Ages and Stages Questionnaires-3 (ASQ-3), scores that fell into Gray (infant developing in the borderline of expectations) or Black (infant performance below expectations) areas in at least one of the following domains - communication, gross motor, fine motor, problem solving, personal-social.-Non-cancer. Outcome measure: Ages and Stages Questionnaire Edition 3	General public. Infant (0-1), Adults (18+). China; Shanghai. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Infants (birth through < 12 months). Mother-infant pairs from three districts in Shanghai, China (enrolled n=154 pairs; used in analysis n=138). March-May 2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at baseline (infant age ranged from 1 to 9 months) and at follow-up (infant age 9 months).	Logistic Regression. Confounders adjusted for: age, sex, BMI, feeding pattern.	Lowest exposure concentration for a significant adverse health outcome response: continuous. MBzP (OR (95% CI))Gross motor: 1.89 (1.17, 3.05)Combined (below expectations in at least one of the above domains): 1.77 (1.16, 2.71). Significant positive associations between MBzP and ASQ-3 scores below expectations were reported for the gross motor developmental domain..	Dong et. al 2019 5559180 High

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Child non-verbal IQ	<p>Health Effect: Reproductive/Developmental-Child nonverbal IQ-Non-cancer-Neurological/Behavioral-Child nonverbal IQ-Non-cancer.</p> <p>Outcome measure: Child nonverbal IQ determined by administering Mosaics and Categories subtests from Snijders-Oomen Nonverbal Intelligence Test Revised (SON-R)</p>	<p>General public, Pregnant people. Middle childhood (6-11). Netherlands; Rotterdam. Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters, Sociodemographic Status (ex. race/ethnicity, socioeconomic). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). Pregnant women living in Rotterdam who are enrolled in Generation R cohort (analysis sample included 1,282 mother child pairs). Generation R. Enrollment: 2002-2006; Follow-up: Year NR (child 6 years of age).</p>	<p>Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days)</p> <p>Exposure measured during early pregnancy (<18 weeks), mid pregnancy (18-25 weeks), and late pregnancy (>25 weeks).</p>	<p>Linear Regression. Confounders adjusted for: Maternal age, ethnicity, education, income, marital status, alcohol consumption during pregnancy, maternal nonverbal IQ, prepregnancy BMI, parity, smoking during pregnancy, child sex, child age at assessment.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI) per 1 log10 unit increase in creatinine-adjusted total high molecular weight phthalate metabolites concentration (ug/g Cr) at <18 weeks of gestation for child nonverbal IQ: -1.98 (-3.82,-0.13).</p> <p>There were significant associations between creatinine adjusted HMWP metabolite concentrations at <18 weeks of gestation and child nonverbal score..</p>	<p>Dries et. al 2020 9387317 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Weight, BMI	Health Effect: Nutritional/Metabolic-Body weight, BMI-Non-cancer. Outcome measure: Assess- ment by clinical pediatrician	General public. Preschool (3-5), Middle childhood (6-11). Turkey; Antalya. Female. Case-Control. PESS: Lifestage , Studies focusing on repro- ductive parameters. Lifestage PESS: Children (age 1 year through < 11 years). Cases – Turkey, Antalya City, 29 girls (4-8 years old) with premature thelarche. Controls – Turkey, Antalya City, 25 healthy girls (4-8 years old). 2010-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Not specified but likely concur- rent with or after development of outcome due to case-control design.	nan.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Spearman correlation coefficient (p-value)MBzP and BMI: 0.375 (p=0.041). Significant positive correlation between MBzP and BMI. Correlation between MBzP and weight posi- tive but not significant..	Durmaz et. al 2018 5512126 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Externalizing problems in the borderline or clinical range	Health Effect: Neurological/Behavioral- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrationsOR (95% CI): 2.07 (1.27, 3.38). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.05 level.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
BSI in the borderline or clinical range	Health Effect: Neurological/Behavioral- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrationsOR (95% CI): 2.02 (1.31, 3.13). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.05 level.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Hyperactivity in the borderline or clinical range	Health Effect: Neurological/Behavioral- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrationsOR (95% CI): 1.60 (1.09, 2.35). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.10 level.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Aggres- sion in the borderline or clinical range	Health Effect: Neurological/Behavioral- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrationsOR (95% CI): 1.61 (1.05, 2.47). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.05 level.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Anxiety in the border- line or clin- ical range	Health Effect: Neurological/Behavioral- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrationsOR (95% CI): 1.66 (1.22, 2.24). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.10 level.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Withdrawal in the bor- derline or clinical range	Health Effect: Neurological/Behavioral- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrationsOR (95% CI): 1.67 (1.13, 2.45). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.10 level.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Externalizing problems in the borderline or clinical range	Health Effect: Neurological/Behavioral-Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention-Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) problems, withdrawn, attention problems.-Non-cancer-Reproductive/Developmental-Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Logistic Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted OR per 1-unit increase in unadjusted MBzP concentrations OR (95% CI): 1.80 (1.19, 2.72). Significant positive association in anxiety per 1-unit increase in MBzP. Significant at the q < 0.05 level.	England-Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Externalizing problems in the 3-4 year old children	Health Effect: Neurological/Behavioral-scores in the Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention-Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) problems, withdrawn, attention problems.-Non-cancer-Reproductive/Developmental-Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Linear Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Regression coefficients (95% CI) for: Overall cohort: 0.16 (0.04, 0.28) **Females: 0.08 (-0.09, 0.25) Males: 0.26 (0.08, 0.44) ***. Significant associations noted for the overall cohort and males for externalizing problems associated with prenatal MBzP phthalate quartiles.** q < 0.10*** q < 0.05.	England-Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Internalizing problem scores in the 3-4 year old children	Health Effect: Neurological/Behavioral-scores in the Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention-Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) problems, withdrawn, attention problems.-Non-cancer-Reproductive/Developmental-Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Linear Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Regression coefficients (95% CI) for:Overall cohort: 0.16 (0.04, 0.29)**Females: 0.09 (-0.09, 0.28)Males: 0.24 (0.06, 0.42) **. Significant associations noted for the overall cohort and males for internalizing problems associated with prenatal phthalate MBzP quartiles.** q < 0.10*** q < 0.05.	England-Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Behavioral symptoms index scores in the 3-4 year old children	Health Effect: Neurological/Behavioral- index scores Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention- Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) prob- lems, withdrawn, attention problems.-Non-cancer- Reproductive/Developmental- Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Linear Regression. Con- founders adjusted for: urinary creatinine, fam- ily income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Regression coefficients (95% CI) for:Overall co- hort: 0.18 (0.05, 0.30) ***Females: 0.10 (-0.08, 0.28)Males: 0.26 (0.09, 0.43) ***. Significant associations noted for the overall cohort and males for behavioral symptoms index scores associated with prenatal MBzP phthalate quartiles.** q < 0.10*** q < 0.05.	England- Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Externalizing problem scores in the 3-4 year old children	Health Effect: Neurological/Behavioral-Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite scales (Internalizing problems, externalizing problems, and behavioral symptoms index), (BASC-2 four "adaptive" scales and adaptive skills composites scale not included). Also includes parent version of the Child Behavior Checklist (CBCL) T scores-two broad syndrome groupings (Internalizing problems, externalizing problems), Total problems, Attention-Deficit Hyperactivity (ADH) problems, aggressive behavior, anxious/depressed, anxiety problems, affective problems, somatic complaints, pervasive developmental (PD) problems, withdrawn, attention problems.-Non-cancer-Reproductive/Developmental-Mother-completed preschool version of the Behavior Assessment System for Children-Second Edition Parent Rating Scales-Preschool (BASC-2) T scores- eight "clinical" scales (Hyperactivity, aggression, anxiety, depression, somatization, atypicality, withdrawal, and attention problems), and three of four composite	Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the Alberta Pregnancy Outcomes and Nutrition (APrON) study (enrolled n=351, used in analysis n=351). Alberta Pregnancy Outcomes and Nutrition (APrON). 2009-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during the second trimester of pregnancy.	Linear Regression. Confounders adjusted for: urinary creatinine, family income, child sex, Full-Scale Intelligence Quotient (FSIQ).	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Regression coefficients (95% CI) for:Overall cohort: 0.10 (-0.03, 0.22)Females: 0.01 (-0.16, 0.19)Males: 0.19 (0.01, 0.37)*. Significant associations between MBzP and externalizing problems on the CBCL in males. No significant associations for the overall cohort or females. * p < 0.05.	England-Mason et. al 2020 6717805 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Masculine scores	<p>Health Effect: Neurological/Behavioral-Preschool Activities Inventory (PSAI) scores for masculine, feminine, and composite-Non-cancer.</p> <p>Outcome measure: Preschool Activities Inventory Modified (PSAI-M)</p>	<p>Pregnant people. Preschool (3-5), Adults (18+).</p> <p>United States; California, New York, Washington, Minnesota.</p> <p>Female, Male.</p> <p>Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years).</p> <p>Mother-child pairs from the TIDES cohort study (enrolled n=969, used in study n=498, used in analysis n=243 boys). The Infant Development and the Environment Study (TIDES). 2010-2012.</p>	<p>Biomonitoring Biomonitoring matrix: Urine</p> <p>Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days)</p> <p>Exposure measured during first and third trimesters.</p>	<p>Linear Regression. Confounders adjusted for: child age, maternal education, race, same sex older sibling, parental attitudes.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted regression coefficient (95% CI)MBzP: -2.4 (-4.1, -0.7).</p> <p>Significant negative association between MBzP phthalate concentrations and masculine scores in boys.</p>	<p>Evans et. al 2021 9354255 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

...continued from previous page

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Masculine scores	<p>Health Effect: Neurological/Behavioral-Preschool Activities Inventory (PSAI) scores for masculine, feminine, and composite-Non-cancer.</p> <p>Outcome measure: Preschool Activities Inventory Modified (PSAI-M)</p>	<p>Pregnant people. Preschool (3-5), Adults (18+).</p> <p>United States; California, New York, Washington, Minnesota.</p> <p>Female, Male.</p> <p>Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years).</p> <p>Mother-child pairs from the TIDES cohort study (enrolled n=969, used in study n=498, used in analysis n=255 girls). The Infant Development and the Environment Study (TIDES). 2010-2012.</p>	<p>Biomonitoring Biomonitoring matrix: Urine</p> <p>Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days)</p> <p>Exposure measured during first and third trimesters.</p>	<p>Linear Regression. Confounders adjusted for: child age, maternal education, race, same sex older sibling, parental attitudes.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted regression coefficient (95% CI)MBzP: -2.1 (-4.0, -0.3).</p> <p>Significant negative association between phthalate concentrations and masculine scores in girls.</p>	<p>Evans et. al 2021 9354255 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

...continued from previous page

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Masculine scores	<p>Health Effect: Neurological/Behavioral-Preschool Activities Inventory (PSAI) scores for masculine, feminine, and composite-Non-cancer.</p> <p>Outcome measure: Preschool Activities Inventory Modified (PSAI-M)</p>	<p>Pregnant people. Preschool (3-5), Adults (18+).</p> <p>United States; California, New York, Washington, Minnesota.</p> <p>Female, Male.</p> <p>Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years).</p> <p>Mother-child pairs from the TIDES cohort study (enrolled n=969, used in study n=498, used in analysis n=243 boys). The Infant Development and the Environment Study (TIDES). 2010-2012.</p>	<p>Biomonitoring Biomonitoring matrix: Urine</p> <p>Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days)</p> <p>Exposure measured during first trimester.</p>	<p>Linear Regression. Confounders adjusted for: child age, maternal education, race, same sex older sibling, parental attitudes.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted regression coefficient (95% CI)MBzP: -2.7 (-4.5, -0.9).</p> <p>Significant negative association between MBzP phthalate concentrations and masculine scores in boys.</p>	<p>Evans et. al 2021 9354255 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Masculine scores	Health Effect: Neurological/Behavioral-Preschool Activities Inventory (PSAI) scores for masculine, feminine, and composite-Non-cancer. Outcome measure: Preschool Activities Inventory Modified (PSAI-M)	Pregnant people. Preschool (3-5), Adults (18+). United States; California, New York, Washington, Minnesota. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs from the TIDES cohort study (enrolled n=969, used in study n=498, used in analysis n=255 girls). The Infant Development and the Environment Study (TIDES). 2010-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during first trimester.	Linear Regression. Confounders adjusted for: child age, maternal education, race, same sex older sibling, parental attitudes.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted regression coefficient (95% CI)MBzP: -2.3 (-4.3, -0.4). Significant negative association between phthalate concentrations and masculine scores in girls.	Evans et. al 2021 9354255 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Birth out- comes (birth length, birth weight, ges- tational age)	Health Effect: Reproductive/Developmental- birth length, birth weight, length, birth weight, ges- tational age Outcome measure: Not specified	General public, Pregnant people. Infant (0-1), Adults (18+). China; Wuhan. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months). Mother-infant pairs in Wuhan, China (n=997 el- igible, n=799 with urine sample, n=115 with DNA methylation measured in cord blood, n=106 with suffi- cient urine volume and used in analysis). Recruitment during late pregnancy: 2011-2012; Follow-up: through delivery.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured when women presented to the clinic for delivery.	Generalized Additive Model (GAM). Con- founders adjusted for: age, pre-pregnancy BMI, marital status, passive smoking, infant sex, cre- atinine, gestational age (birth length and birth weight models only).	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficients (95% CI) for MBzP: Gestational age, all participants: 0.16 (0.03, 0.29) Gestational age, boys: 0.22 (0.04, 0.41) Birth length, boys: 0.15 (0.01, 0.28). Significant positive associations between MBzP and gestational age among all participants and among boys only. Significant positive association between MBzP and birth length in boys only. No significant associations in girls or with birth weight outcome..	Huang et. al 2018 4728501 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Neurodevelopmental outcomes: executive function; cognition; social cognition; and attention and behavior	Health Effect: Neurological/Behavioral-outcomes: Executive Function, Social Cognition, Cognition/Intelligence, Attention and Behavior.-Non-cancer. Outcome measure: Standardized assessments administered by study staff or completed by parents and/or teachers. Includes BRIEF, NEPSY tower, Wisconsin Card Sort, Wechsler Intelligence Scale, Social Responsiveness Scale, BASC, Connors ADHD/DSM-IV scale, CPT II	General public, Pregnant people. Middle childhood (6-11), Teens (12-17), Adults (18+). United States; Salinas Valley, California. Female, Male. Cohort (Prospective). PESS: Lifestage , Sociodemographic Status (ex. race/ethnicity, socioeconomic). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Adolescents (age 11 years through < 21 years). Low-income US born Mexican-American children (n=334) followed prenatally through age 16 years. CHAMACOS (Center for the Health Assessment of Mothers and Children of Salinas) birth cohort. Recruitment: 1999-2000; Follow-up: 2015-2016.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Generalized linear mixed model. Confounders adjusted for: maternal age, education, country of birth, and depression at time of assessment; child sex, age at assessment, and language; HOME score, household income at assessment.	Lowest exposure concentration for a significant adverse health outcome response: Continuous; Geometric mean (GSD) for MBzP = 8.9 (2.6) ng/mL. Beta (95% CI) per log2 increase in MBzP: Internalizing Problems at age 16y, parent report = 0.7 (0.0, 1.4)-Depression scale at age 16y, parent report = 0.8 (0.0, 1.5). Higher concentrations of MBzP during pregnancy were associated with near-significantly higher parent ratings for internalizing problems and depression at age 16y.	Hyland et. al 2019 6815846 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

...continued from previous page

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Autistic traits	Health Effect: Neurological/Behavioral-Autistic traits-Non-cancer. Outcome measure: Social Communication Questionnaire (SCQ)	General public, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Middle childhood (6-11), Adults (18+). South Korea; Seoul and Gyeonggi provinces. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Mother-child pairs in Seoul and Gyeonggi provinces, South Korea (n=527). This study was part of the Environment and Development of Children (EDC) study, which is a prospective birth cohort study in South Korea that enrolled participants from the Congenital Anomaly Study (CAS).. Recruitment: 2008-2010; Follow-up: through child age 8.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy (between 14 and 27 weeks gestation) and at child ages 4, 6, and 8.	Poisson Regression. Confounders adjusted for: Poisson models for phthalates measured during pregnancy: child's age, sex, twin, birth order, phthalate levels at age of outcome assessment; Poisson models for phthalates measured during childhood: child's age, sex, twin, birth order, maternal education level, current environmental tobacco smoke, phthalate levels at time of SCQ assessment (or phthalate measured at pregnancy); GEE models: age, sex, twin, birth order, maternal education level, current environmental tobacco smoke, phthalate levels during pregnancy.	Lowest exposure concentration for a significant adverse health outcome response: continuous. % change in SCQ score (95% CI): Age 4 MBzP level and age 4 SCQ score, all participants: 11.3 (3.7, 19.4); Age 6 MBzP level and age 8 SCQ score, all participants: -10.0 (-15.8, -3.8); Age 8 MBzP level and age 8 SCQ score, all participants: 6.0 (1.4, 10.9); Age 4 MBzP level and age 4 SCQ score, boys: 18.7 (8.2, 30.2); Age 4 MBzP level and age 6 SCQ score, boys: 11.7 (2.1, 22.3); Age 6 MBzP level and age 8 SCQ score, boys: -11.3 (-18.5, -3.5); Age 4 MBzP level and age 8 SCQ score, girls: -14.7 (-24.4, -3.7). For the analyses of all participants, statistically significant positive associations were found between age 4 MBzP level and age 4 SCQ score and between age 8 MBzP level and age 8 SCQ score; and a statistically significant inverse association was found between age 6 MBzP level and age 8 SCQ score.; For the analyses among boys, statistically significant positive associations were found between age 4 MBzP level and age 4 SCQ score and between age 4 MBzP level and age 6 SCQ score; and a statistically significant inverse association was found between age 6 MBzP level and age 8 SCQ score.; For the analyses among girls, a statistically significant inverse association was found between age 4 MBzP level and age 8 SCQ score among girls.; No statistically significant associations were found for MBzP at other time points or in other analyses limited to girls only. A positive but not statistically significant association was found in the repeated measures GEE model across timepoints for all participants, boys, and girls..	Kim et. al 2021 9415898 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
abdominal obesity	Health Effect: Nutritional/Metabolic- Metabolic syndrome (MetS), insulin resistance (IR), abdominal obesity, high fasting blood glucose-Non-cancer- Cardiovascular-High blood pressure, high triglyceride, low HDL-Non-cancer. Outcome measure: Abdominal circumference measured at clinical exam defined as high for men if at least 90cm and for women if at least 80cm	Occupational workers. Adults (18+). Taiwan; Taoyuan. Female, Male. Cross-Sectional. PESS: Occupational. Voluntary military service members in Northern Taiwan (enrolled n=503, used in analysis=435). 2017.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at time of study enrollment.	Logistic Regression. Confounders adjusted for: sex and smoking habit.	Lowest exposure concentration for a significant adverse health outcome response: >0.01 ug/kg/day. OR (95% CI) for above vs. at or below the median: 1.816 (1.180, 2.797). A significant positive association was reported for the daily intake (DI) of BBP with abdominal obesity for participants with BBP DI greater than the median versus those at or below the median..	Ko et. al 2019 5433079 High
abdominal obesity	Health Effect: Nutritional/Metabolic- Metabolic syndrome (MetS), insulin resistance (IR), abdominal obesity, high fasting blood glucose-Non-cancer- Cardiovascular-High blood pressure, high triglyceride, low HDL-Non-cancer. Outcome measure: Abdominal circumference measured at clinical exam defined as high for men if at least 90cm and for women if at least 80cm	Occupational workers. Adults (18+). Taiwan; Taoyuan. Female, Male. Cross-Sectional. PESS: Occupational. Voluntary military service members in Northern Taiwan (enrolled n=503, used in analysis=435). 2017.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at time of study enrollment.	Logistic Regression. Confounders adjusted for: sex and smoking habit.	Lowest exposure concentration for a significant adverse health outcome response: >0.01 ug/kg/day. OR (95% CI) for above vs. at or below the median: 1.816 (1.180, 2.797). A significant positive association was reported for the daily intake (DI) of BBP with abdominal obesity for participants with BBP DI greater than the median versus those at or below the median..	Ko et. al 2019 5433079 High

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Child Temperament Questionnaire scores: 9 dimensions of activity level, rhythmicity, withdrawal, approach, adaptability, reaction intensity, mood quality, attention, span/persistence, threshold of responsiveness, distractibility, and responsiveness threshold.	Health Effect: Neurological/Behavioral-Child temperament traits and behaviors (activity level, rhythmicity, withdrawal, adaptability, intensity of reaction, positive mood, persistence, distractibility, threshold of responsiveness)-Non-cancer-Reproductive/Developmental-Child temperament traits and behaviors (activity level, rhythmicity, withdrawal, adaptability, intensity of reaction, positive mood, persistence, distractibility, threshold of responsiveness)-Non-cancer. Outcome measure: Parent assessment using three age-specific questionnaires: Chinese Toddler Temperament Scale (CTTS) at age 2 years, the Behavior Style Questionnaire-Chinese version (BSQ-C) at age 5 years, and the Middle Childhood Temperament Questionnaire-Chinese version at age 11 years	General public, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Middle childhood (6-11), Adults (18+). Taiwan. Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters. Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). Taiwanese women from a pilot study for the Taiwan Maternal and Infant Cohort Study recruited during pregnancy (analysis sample included 208 mother-child pairs).. Pilot for the Taiwan Maternal and Infant Cohort Study (TMICS). Recruitment: December 1, 2000-November 30, 2001; Follow-up: through 2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during third trimester of pregnancy; child exposure measured at 2 years, 5 years, and 11 years.	Linear Regression. Confounders adjusted for: gender, parental education, parity, parenting styles, prenatal levels and urinary phthalate metabolite concentrations of children concurrent with outcome measures included jointly.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (SE) per 1 log10 unit increase for the following temperament domains. Maternal MBzP, temperament at age 2 years: -intensity of reaction = -0.27 (0.13), p<0.05; -intensity of reaction, boys = -0.35 (0.14), p<0.05; girls = -0.24 (0.29) ns. Maternal MBzP, temperament at age 5 years: -threshold of responsiveness = -0.46 (0.18), p<0.05; Maternal MBzP, temperament at age 11 years: -withdrawal = 0.39 (0.18), p<0.05.. Significant negative associations for maternal MBzP (ug/g creatinine) and intensity of reaction (age 2y), threshold of responsiveness (age 5y) and withdrawal (age 11 y)..	Ku et. al 2020 5933569 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Full-Scale IQ	Health Effect: Neurological/Behavioral- Full-scale IQ at age 5 years (Wechsler Preschool and Pri- mary Scale of Intelligence- III [WPPSI-III]) and full scale IQ at age 8 years (Wechsler Intelligence Scale for Children-IV [WISC- IV])-Non-cancer. Outcome measure: Wechsler Intelligence Scales	General public, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Middle childhood (6-11), Adults (18+). United States; Cincinnati, OH. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Children (n=253) from greater Cincinnati, OH whose mothers were re- cruited during pregnancy in 2003-2006, followed through age 8y.. Health Outcomes and Measures of the Envi- ronment (HOME) Study. Recruitment 2003-2006; Follow-up 2013-2015.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy and annually from ages 1-5y and at age 8y.	Generalized linear mixed model. Confounders adjusted for: maternal age, education, marital status, IQ, serum cotinine in pregnancy and pre- pregnancy BMI along with household income, child race, child sex, HOME scores.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Beta (95% CI) for association between log10 MBzP and full-scale IQ at age 5 or 8 years: -MBzP in urine at age 3y = -2.5 (-4.4, -0.6)-MBzP in urine at age 8y= -1.8 (-3.5, -0.1). MBzP in urine collected at ages 3 and 8 years was associated with significantly lower full scale IQ at ages 5 or 8 years. MBzP in urine from other time pe- riods was not associated with significant differences in IQ scores..	Li et. al 2019 5053633 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Childhood behavior (includes internalizing problems, externalizing problems, a behavioral symptoms index and individual clinical subscales)	Health Effect: Neurological/Behavioral-Child behavior, as reported by parents or caregivers using the Behavioral Assessment System for Children-2 (BASC-2) (internalizing problems, externalizing problems, Behavioral Symptoms Index [BSI] and nine clinical subscales.-Non-cancer. Outcome measure: Behavioral Assessment System for Children-2 (BASC-2), parent/caregiver report	General public, Pregnant people. Toddler (2-3), Preschool (3-5), Middle childhood (6-11). United States; Cincinnati, OH. Female, Male. Cohort (Prospective). PESS: Lifestage , Other PESS category specified in the reference. Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Birth cohort of children from greater Cincinnati residing in homes build prior to 1978 during pregnancy. Health Outcomes and Measures of the Environment (HOME) study. Recruitment 2003 to 2006 during pregnancy; Follow-up at ages 1-5 years and at age 8 years.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during pregnancy and repeatedly during childhood.	Generalized linear mixed model. Confounders adjusted for: Maternal age, pre-pregnancy BMI, cotinine levels in pregnancy, maternal depression, alcohol use in pregnancy, maternal education, marital status, child sex, race/ethnicity, and age at outcome assessment.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. Adjusted beta (95% CI) for difference in subscale scores per 1 IQR increase in log10 childhood MBzP: Behavioral Symptom Index = 1.4 (0.0, 2.7) Depression= 1.3 (0.0, 2.7)Somatization = 1.3 (0.0, 2.7)Conduct problems = 3.0 (0.8, 5.1). Higher MBzP in childhood was associated with significantly higher child behavior scores for depression, somatization and conduct problems..	Li et. al 2020 9419532 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
eGFR calculated from serum creatinine; UPCR calculated from urinary protein and creatinine	Health Effect: Renal/Kidney-Estimated glomerular filtration rate (eGFR), urinary protein to creatinine ratio (UPCR),- Non-cancer. Outcome measure: Estimated glomerular filtration rate (eGFR) was calculated using the modified equation formulated by Schwartz and colleagues, and urinary protein to creatinine ratio (UPCR) was measured from the first morning urine samples.	General public. Infant (0-1), Toddler (2-3), Preschool (3-5), Middle childhood (6-11), Teens (12-17). United States. Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Chronic Kidney Disease in Children (CKiD) Study: (2005-2008 and 2009-2014), United States, n = 538 children ages 1-17 (boys = 344, girls = 194) years of age. National Health And Nutrition Examination Survey (NHANES). 2005-2008 and 2009-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured in the years of 2007-2008.	Linear Regression. Confounders adjusted for: sex, age at visit, race, ethnicity, glomerular disease, birth weight, low birth weight, prematurity, BMI z-score, use of ACE-I/ARB, SBP and DBP z-scores, urinary creatinine, and urinary cotinine.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI) for eGFR: not significant. Regression coefficient (95% CI) for UPCR: -16.21 (-25.74, -5.50).. MBzP was associated with a significant decrease in the urinary protein to creatinine ratio (MBzP = -16.21 (-25.74, -5.50)..	Malits et. al 2018 4829246 Medium
gestational diabetes status, miRNA expression (miR-9-5p, miR-16-5p, miR-29a-3p, miR-330-3p)	Health Effect: Nutritional/Metabolic-gestational diabetes mellitus status, mRNA expression (miR-9-5p, miR-16-5p, miR-29a-3p, miR-330-3p)- Non-cancer. Outcome measure: Gestational diabetes was assessed using a 75-g two-hour oral glucose tolerance test. miRNA expression (serum) was measured using various laboratory techniques.	Patients in clinics, Pregnant people. Adults (18+). Mexico; Mexico City. Female. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). 40 pregnant women seeking care at a single prenatal facility in Mexico City (18 with gestational diabetes, 22 without gestational diabetes). not stated.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Mann-Whitney U test. Confounders adjusted for: none.	Lowest exposure concentration for a significant adverse health outcome response: continuous. MBzP (creatinine adjusted), among women without GDM:Spearman correlation coefficient for mir-16: 0.4737 (p<0.05). Among women without GDM, MBzP was positively correlated with expression of mir-16..	Martínez- Ibarra et. al 2019 5432795 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Sex hormone concen- trations (luteinizing hormone, hormone, follicle stimulating hormone, testosterone, androstene- dione, 17alpha- hydroxyproges- terone, sulfate	Health Effect: Reproductive/Developmental- hormone levels: testosterone, luteinizing hormone (LH), follicle stimulating hormone (FSH), an- drostenedione (adione), 17 alpha-hydroxyprogesterone (17-OHP), dehy- droepiandrosterone (DHEAS), testosterone/LH ratio-Non-cancer. Outcome measure: Mea- sured in serum of infants at dehy- droepiandro- sterone sulfate	General public, Pregnant people. Infant (0-1), Adults (18+). Denmark; Odense. Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on repro- ductive parameters. Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months). Pregnant women and their singleton infants residing in Odense, Denmark (n=479 mother/child pairs). Odense Child Cohort study. 2010-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at approxi- mately 28 weeks gestation.	Linear Regression. Con- founders adjusted for: postconceptional age, par- ity, and BMI z-score.	Lowest exposure concentration for a significant adverse health outcome response: 2nd tertile, but specific ranges not provided; Median (IQR) = 2.4 (<LOD, 5.2) ng/mL. Percent change (95%) in FSH among males for MbzP:T2 vs. T1: -13.8 (-25.3, -0.5)T3 vs T1 -6.6 (-18.9, 7.7) p-trend 0.411. For follicle stimulating hormone among males, a significant inverse association was reported for T2 vs T1. No significant results were reported for other sex hormones among males or females..	Muerköster et. al 2020 7978907 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
FOLIC ACID SUP- PLEMEN- TATION: Total SRS score, social awareness, social cognition, social communication, social motivation, restricted inter- ests/repetitive behavior	Health Effect: Neurological/Behavioral-Autistic Traits: Total Social Responsiveness Scale (SRS) T-score, social awareness, social cognition, social communication, social motivation, restricted interests and repetitive behavior-Non-cancer. Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 compatible social communication, and DSM-5 compatible restricted interests and repetitive behavior-Non-cancer. Outcome measure: SRS-2	General public, Pregnant people. Toddler (2-3), Preschool (3-5), Adults (18+). Canada. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). 556 Canadian mothers and infants (Enrolled n =2001, Follow-up n =610; Used in analysis n = 510). Maternal-Infant Research on Environmental Chemicals (MIREC). 2008-2011.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Maternal first trimester exposure measured via biomonitoring.	Generalized Additive Model (GAM). Confounders adjusted for: study city, child sex, household income, maternal education, maternal age, parity, marital status, race/ethnicity, and year of enrollment.	Lowest exposure concentration for a significant adverse health outcome response: continuous. A 2-fold increase in gestational urinary MBzP concentrations was associated with an increase of 1.2 points (95% CI: 0.2, 2.2) in total SRS scores among children whose mothers had taken <400 micrograms of folic acid per day while results for children whose mothers had taken greater than or equal to 400 micrograms of folic acid per day noted a 2-fold increase in gestational urinary MBzP was associated with a 0.0 (95% CI: -0.4, 0.4) points change in total SRS scores, p for interaction= 0.03 (Table S3). Similarly, for social cognition and restricted interests, a 2-fold increase in gestational urinary MBzP was associated with an increase of 1.7 (95% CI: 0.7, 2.8) and 1.1 (95% CI: 0.0,2.3), respectively in children whose mothers had taken inadequate (<400 micrograms) of folic acid per day versus 0.0 (95% CI: -0.4, 0.4) p-interaction<0.001 and 0.1 (95% CI: -0.3, 0.6) p-interaction=0.08, respectively in children whose mothers had taken adequate (>=400 micrograms) of folic acid per day. None of the other SRS subscales indicated significant folic acid intake interactions with MBzP.. Folic acid supplementation during pregnancy consistently and significantly attenuated the positive associations between gestational urinary phthalate concentrations and high SRS total and subscale scores (Figure 3, Table S3). This trend of effect modification was significant (P < 0.1) for MCPP and ΣDEHP with all SRS subscales and Total scores and was also significant for MBP with Social Cognition and Total scores, and for MBzP with Social Cognition, Restricted Interests and Repetitive Behavior and Total SRS scores..	Oulhote et. al 2020 6718069 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Breast can- cer	Health Effect: Cancer/Carcinogenesis- Breast cancer-Cancer- Reproductive/Developmental- Breast cancer-Cancer. Outcome measure: Cancer database and physician con- firmation	Pregnant people. Adults (18+), Older Adults (65+). United States; Long Island, New York. Female. Cohort (Prospective). PESS: Lifestage , Studies focusing on repro- ductive parameters. Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Older adults (age \geq 65 years). 1,308 adult females in Long Island, New York (n=710 cases, n=598 controls, cases followed-up for mor- tality data). Long Island Breast Cancer Study Project (LIBCSP). Enrollment: 1996- 1997; Follow-up: Up to 12/31/2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at enroll- ment, post-diagnosis of breast cancer and pre-mortality.	Logistic Regression. Con- founders adjusted for: Age, age at menarche, education, menopausal status, hormone replace- ment therapy use, body mass index, oral contra- ceptive use.	Lowest exposure concentration for a significant adverse health outcome response: 7.03-10.9 ug/g creatinine. OR (95% CI): Q2 vs. Q1: 0.64 (0.45, 0.91) Q3 vs. Q1: 0.81 (0.57, 1.14) Q4 vs. Q1: 0.59 (0.41, 0.84) Q5 vs. Q1: 0.72 (0.50, 1.03). A significant inverse association was reported for breast cancer and MBzP for the 2nd and 4th quintile compared to the 1st quintile; significance was not maintained for other quartiles or when analyzed continuously..	Parada et. al 2018 4728408 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
autism spectrum-related behaviors	Health Effect: Neurological/Behavioral-Autism spectrum-related behaviors (Social Responsiveness Scale score)-Non-cancer. Outcome measure: Social Responsiveness Scale (SRS) scores	General public, Pregnant people. Preschool (3-5), Middle childhood (6-11), Adults (18+). United States; Cincinnati, Ohio. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years). Pregnant women recruited from nine prenatal clinics in the Cincinnati, Ohio area and their children (n=276). Health Outcomes and Measures of the Environment (HOME) cohort. Recruitment: during pregnancy 2003-2008; Follow-up: age 4-8.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Quantile regression. Confounders adjusted for: maternal age, maternal race, income, parity, serum cotinine.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI) at different percentiles of the outcome distribution: 50th percentile: 1 (-3, 4); 75th percentile: 1 (-2, 5); 95th percentile: 10 (2, 14). At the 95th percentile of the outcome distribution, MBzP was associated with more deficits in social responsiveness traits in the HOME cohort..	Patti et. al 2021 8350115 High
Incident primary invasive breast cancer	Health Effect: Cancer/Carcinogenesis-Breast cancer-Cancer-Reproductive/Developmental-Breast cancer-Cancer. Outcome measure: Self-reported with medical records adjudication	General public. Adults (18+), Older Adults (65+). United States. Female. Nested Case-Control. PESS: Lifestage . Lifestage PESS: Older adults (age >= 65 years). 1,257 postmenopausal women (n=419 cases, 838 controls). Women's Health Initiative (WHI). 1993-1998.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured via biomonitoring (2-3 spot urines) within ~3 years of recruitment.	Logistic Regression. Confounders adjusted for: age, race/region, neighborhood socioeconomic status index, body mass index, alcohol use, smoking status, Gail risk score, postmenopausal hormone therapy use at enrollment, hormone therapy trial assignment, dietary modification trial assignment.	Lowest exposure concentration for a significant adverse health outcome response: 18.03-27.42 ug/g creatinine. OR (95% CI) for Q3 v Q1 MBzP: For all cases: 0.57 (0.39-0.84) For ER-/PR- cancers: 0.23 (0.05 to 0.97) For ER+/PR+ cancers: 0.65 (0.41 to 1.03). Significant inverse association between the third quartile of MBzP and breast cancer risk overall, and for ER-/PR- cancers. An inverse association with ER+/PR+ tumors was marginally non-significant. Associations were not significant using continuous exposure, or with other MBzP quantiles..	Reeves et. al 2019 5043615 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Change in weight after pregnancy	Health Effect: Nutritional/Metabolic- Weight change after pregnancy-Non-cancer- Reproductive/Developmental- Weight change after pregnancy-Non-cancer. Outcome measure: Mea- sured during clinical follow- up visits	General public, Pregnant people. Adults (18+). Mexico. Female. Cohort (Prospective). PESS: Lifesage , Studies focusing on repro- ductive parameters. Lifesage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth). Mexican women from a sub- sample of the ELEMENT cohort recruited during preg- nancy (n = 178). ELEMENT cohort. Recruitemet: 1997-2004; Follow-up: 1998-2005 and 2008-2011.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Linear mixed model. Confounders adjusted for: age, education, parity rate, energy intake, marital status.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI): -0.21 (-0.38, -0.03). Significant negative associations for MBzP from main model. Significant negative associations also reported in models including all 9 metabolites..	Rodríguez- Carmona et. al 2019 5043451 Medium
TSH	Health Effect: Thyroid-TSH, TT4, TT3, FT4, FT3-Non- cancer. Outcome measure: Clinical immunoassay analyzer	General public, Pregnant people. Infant (0-1), Adults (18+). United States; Cincinnati, Ohio. Female, Male. Cohort (Retrospective). PESS: Lifesage . Lifesage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months). Pregnant mothers enrolled in the HOME study from March 2003-January 2006 (Enrolled n=468, Followed to birth of singleton pregnan- cies n=389, Used in analysis n=276).. HOME (Health Outcomes and Measures of the Environment). March 2003-January 2006.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at 16 and 26 weeks of gestation, and at birth.	Linear Regression. Con- founders adjusted for: maternal age at delivery, race, education, marital status, household income, parity, serum cotinine dur- ing pregnancy, body mass index, prenatal vitamin use, infant sex, average of log10- maternal urinary bisphenol A, gestational age at delivery, and mode of delivery.	Lowest exposure concentration for a significant ad- verse health outcome response: continuous; median MBZP (ug/g creatinine) = 10. Percent difference (95% CI) in cord serum TSH per 10-fold increase in maternal urinary MBzP: -19.0 (- 33.1, -1.9)Percent difference (95% CI) in cord serum TSH per 10-fold increase in maternal urinary MBzP (adjusted for PCBs and PBDEs): -19.8 (-34.7, -1.5). Significant negative associations were reported for urinary MBzP and at birth cord blood Ln(TSH) lev- els. No significant results were reported for maternal thyroid hormones..	Romano et. al 2018 4728848 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Estimated additional weight change associated with phthalate biomarker concentration at years 3 and 6	Health Effect: Nutritional/Metabolic-Weight change-Non-cancer-Nutritional/Metabolic-Overweight and obesity-Non-cancer. Outcome measure: Height and weight measured at baseline, year 3, and year 6 clinic visits and used to determine BMI	Patients in clinics. Adults (18+), Older Adults (65+). United States. Female. Nested Case-Control. PESS: . Postmenopausal women from clinics throughout the United States (enrolled n=1257; used in analysis n=660 controls). Women's Health Initiative. 1993-1998, follow-up: through 2013.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured at clinic visits.	Mixed effects models. Confounders adjusted for: creatinine, age, ethnicity, alcohol use, physical activity, smoking status, healthy eating index, dietary energy intake, hormone replacement therapy use, education, income, history of diabetes, hypertension, dyslipidemia, cardiovascular diseases.	Lowest exposure concentration for a significant adverse health outcome response: 12.10-22.20 ng/mL. Year 3 Beta (95% CI) for Q3 vs. Q1: -0.44 (-1.87-0.98). Significant negative association reported for Q3 vs. Q1 of MBzP in year 3. No significant associations noted for year 6.	Santana et. al 2019 5613207 Medium
Overweight and obese patients	Health Effect: Nutritional/Metabolic-Weight change-Non-cancer-Nutritional/Metabolic-Overweight and obesity-Non-cancer. Outcome measure: Height and weight measured at baseline, year 3, and year 6 clinic visits and used to determine BMI	Patients in clinics. Adults (18+), Older Adults (65+). United States. Female. Nested Case-Control. PESS: . Postmenopausal women from clinics throughout the United States (enrolled n=1257; used in analysis n=997). Women's Health Initiative. 1993-1998, follow-up: through 2013.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured at clinic visits.	Logistic Regression. Confounders adjusted for: creatinine, age, ethnicity, alcohol use, physical activity, smoking status, healthy eating index, dietary energy intake, hormone replacement therapy use, education, income, history of diabetes, hypertension, dyslipidemia, cardiovascular diseases.	Lowest exposure concentration for a significant adverse health outcome response: 6.00-12.00 ng/mL. Obese OR (95% CI) for Q2 vs. Q1: 2.58 (1.52-4.38)Q4 vs. Q1: 2.73 (1.48-5.04). Significant positive association for Q2 and Q4 vs. Q1 of MBzP concentrations.	Santana et. al 2019 5613207 Medium
cingulate volume, cerebellum volume	Health Effect: Neurological/Behavioral-Brain MRI voxel-based morphometry (VBM) and generalized q-sampling imaging (GQI) mapping-Non-cancer. Outcome measure: brain MRI	General public, Pregnant people. Teens (12-17), Adults (18+). Taiwan; central Taiwan. Female, Male. Cohort (Prospective). PESS: . 49 mother-child pairs in Taiwan. Taiwan Maternal and Infant Cohort Study. NR.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during pregnancy.	Linear Regression. Confounders adjusted for: Gender, IQ, family income, creatinine.	Lowest exposure concentration for a significant adverse health outcome response: continuous. p-value < 0.05. Statistically significant negative associations were found between MBzP exposure and cingulate and cerebellum volumes (corrected p<0.05)..	Shen et. al 2021 8453074 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Rhinitis	Health Effect: Lung/Respiratory-Asthma and allergic indicators (wheezing, sneezing, rhinitis)-Non-cancer. Outcome measure: Ques- tionnaire	General public. Preschool (3-5), Middle childhood (6-11). China; 6 administrative districts in Shanghai – 4 urban districts (Yang-Pu district, Hong-kou district, Jing-An district, and Zha-Bei district) and 2 suburban ones (Feng-Xian district and Bao- Shan district). Female, Male. Cross-Sectional. PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years). Follow-up of children ages 5-10 from the CCHH study (2011-2012) in Shanghai, China (n=419). China, Children, Homes, Health (CCHH) project. Recruitment: 2011-2012; Follow-up: 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured via morning urine samples.	Logistic Regression. Confounders adjusted for: gender, age, BMI, breastfeeding time, fam- ily smoking exposure, residence area, maternal education, annual house- hold income, history of parental asthma, wall ma- terials in children's bed- rooms and floor materials in children's bedrooms..	Lowest exposure concentration for a significant adverse health outcome response: >1.3 ug/g. OR (95% CI) for Q4 vs. Q1: 2.46 (1.17 - 5.14). Significant positive associations were reported for Q4 MBzP values and the prevalence odds of rhinitis..	Shi et. al 2018 4829218 Low

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Equal to or >2 con- comitant symptoms	Health Effect: Lung/Respiratory-Asthma and allergic indicators (wheezing, sneezing, rhinitis)-Non-cancer- Skin/Connective Tissue- Eczema-Non-cancer. Outcome measure: Ques- tionnaire	General public. Preschool (3-5), Middle childhood (6-11). China; 6 administrative districts in Shanghai – 4 urban districts (Yang-Pu district, Hong-kou district, Jing-An district, and Zha-Bei district) and 2 suburban ones (Feng-Xian district and Bao- Shan district). Female, Male. Cross-Sectional. PESS: Lifestate . Lifestage PESS: Children (age 1 year through < 11 years). Follow-up of children ages 5-10 from the CCHH study (2011-2012) in Shanghai, China (n=419). China, Children, Homes, Health (CCHH) project. Recruitment: 2011-2012; Follow-up: 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Acute (less than 24 hours) Exposure measured via morning urine samples.	Logistic Regression. Confounders adjusted for: gender, age, BMI, breastfeeding time, fam- ily smoking exposure, residence area, maternal education, annual house- hold income, history of parental asthma, wall ma- terials in children's bed- rooms and floor materials in children's bedrooms..	Lowest exposure concentration for a significant adverse health outcome response: >1.3 ug/g. OR (95% CI) for Q4 vs. Q1, p <0.01. Significant positive associations were reported for Q4 MBzP values and the prevalence two or more concomitant symptoms of allergies and/or asthma..	Shi et. al 2018 4829218 Low
Metabolic syndrome (MetS)	Health Effect: Cardiovascular-Metabolic syndrome (MetS)-Non- cancer. Outcome measure: Ques- tionnaire	General public. Adults (18+), Older Adults (65+). South Korea. Female, Male. Cross-Sectional. PESS: Other Chemical and Non-chemical stressors (ex. exposure to other substances that affect same organ as test chemical). 5251 general population adults in South Korea. Ko- rean National Environmental Health Survey II (KNEHS). 2012-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured via biomon- itoring concurrent with outcome assessment.	Logistic Regression. Confounders adjusted for: creatinine.	Lowest exposure concentration for a significant adverse health outcome response: quartile 2. OR (95% CI) for Q2 vs. Q1: 1.318 (1.015 - 1.711); Q3 vs. Q1:1.453 (1.124–1.878); Q4 vs. Q1: 1.615 (1.254–2.078). Significant positive associations were reported for all quartiles but only in the models adjusted for creati- nine. Results for the other models were positive but not statistically significant..	Shim et. al 2019 5114010 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Autism Spectrum Disorder (ASD)	Health Effect: Neurological/Behavioral- Autism spectrum disorder (ASD), non-typical develop- ment (Non-TD)-Non-cancer. Outcome measure: Autism Spectrum Disorder (ASD) and Non-Typical Develop- ment (Non-TD) assessed by licensed clinical psy- chologists using the Autism Diagnostic Observation Schedules (ADOS) and by administration of the Mullen Scales of Early Learning (MSEL).	General public, Pregnant people. Preschool (3-5), Adults (18+). United States; Northern California. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). MARBLES (Markers of Autism Risk in Babies – Learning Early Signs), Cal- ifornia, United States, n = 201 (boys = 122, girls = 79). Markers of Autism Risk in Babies – Learning Early Signs (MARBLES). Recruitment: 2006-2014, Follow-up: age 3.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during each trimester of pregnancy.	Logistic Regression. Confounders adjusted for: pre-pregnancy BMI, year of birth (linear and squared terms), and home- ownership.	Lowest exposure concentration for a significant adverse health outcome response: continuous. RRR (95% CI) for the association between MBzP measured in mid-late pregnancy and Non-TD in boys: 1.75 (1.06, 2.88). Significant positive association between MBzP con- centrations in mid-late pregnancy and non-typical development (vs. typical development) in boys. As- sociations in girls, in the entire study population, and in analyses stratified by prenatal vitamin use not significant. Associations with ASD not significant..	Shin et. al 2018 5043457 High

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Significant ADHD-related behavior problems	Health Effect: Neurological/Behavioral-Attention Deficit-Hyperactivity Disorder (ADHD) related behaviors-Non-cancer. Outcome measure: Questionnaire: Parent, teacher and self-reported indices using the Behavior Assessment System for Children (BASC-2) Conners Attention Deficit Scale (CADS) checklists	General public, Fenceline communities. Teens (12-17). United States; New Bedford, MA. Female, Male. Cross-Sectional. PESS: Lifestage , Geography/Site-specific (ex. home near exposure source or downstream of release sites). Lifestage PESS: Adolescents (age 11 years through < 21 years). 205 adolescents born in New Bedford, MA near a superfund site. New Bedford Cohort. Age 15-year follow-up visit: 2011-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured concurrently with outcome.	Poisson Regression. Confounders adjusted for: child sex, race/ethnicity, mean test age, specific gravity; maternal age, income, education, marital status, smoking during pregnancy; test indicator.	Lowest exposure concentration for a significant adverse health outcome response: Continuous Median (IQR): -MBzP, ug/L = 9.3 (4.5, 17.8). RR (95% CI) for risk of significant ADHD related behavior problems per unit increase in log2-transformed exposure -MBzP= 1.22 (1.05, 1.42). BBP metabolite MBzP was positively and significantly associated with increased risk of having significant ADHD-related behavior problems..	Shoaff et. al 2020 9419487 Medium
Croup	Health Effect: Lung/Respiratory-Croup-Non-cancer. Outcome measure: Maternal report	Pregnant people. Infant (0-1), Adults (18+). Sweden; Varmland. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months). Pregnant women recruited during their first visit to a public antenatal care center in Sweden and their infants (n=1,062 mother infant pairs). Swedish Environmental Longitudinal, Mother and Child, Asthma and Allergy study (SELMA). 2007-2010.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during early pregnancy (median gestational age = 10 weeks).	Logistic Regression. Confounders adjusted for: sex, mother's education, mother's age, asthma in the family, smoking, creatinine.	Lowest exposure concentration for a significant adverse health outcome response: Q4 (quartile range not reported). MBzP and odds of croup in the first year of life. Analysis among all participants: OR (95% CI) for Q2 vs. Q1: 0.83 (0.43-1.63) OR (95% CI) for Q3 vs. Q1: 1.43 (0.78-2.61) OR (95% CI) for Q4 vs. Q1: 1.83 (1.02-3.30)* Analysis among boys only: OR (95% CI) for Q2 vs. Q1: 1.45 (0.61-3.46) OR (95% CI) for Q3 vs. Q1: 2.10 (0.92-4.79) OR (95% CI) for Q4 vs. Q1: 3.35 (1.49-7.54)*. Significant positive associations with croup for Q4 vs. Q1 of MBzP among all study participants and among boys only. Results were positive but not significant for Q3 vs. Q1. No significant associations among girls only..	Shu et. al 2018 4728698 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Respiratory symptoms (asthma, hay fever, rhinitis, and wheeze) in the past 12 months	Health Effect: Lung/Respiratory-Asthma, wheeze, hay fever, rhinitis (symptoms in the past 12 months)-Non-cancer. Outcome measure: Self- reported via questionnaire	General public. Adults (18+). United States. Female, Male. Cross-Sectional. PESS: . 1091 adults enrolled in NHANES 2005-2006 with spot urine samples and dust endotoxin levels reported.. e National Health and Nutrition Examination Survey (NHANES). 2005-2006.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Acute (less than 24 hours) Exposure measured in adults ≥18 years of age via spot urine samples.	Logistic Regression. Confounders ad- justed for: age, gender, race/ethnicity, BMI, crea- tinine, and cotinine.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Wheeze: Monobenzyl phthalate (MBzP) aOR (95% CI) with 1-unit increase log10-transformed, medium endotoxin: 1.71 (1.09, 2.70); Monobenzyl phthalate (MBzP) aOR (95% CI) with 1-unit increase log10- transformed, high endotoxin: 1.79 (1.13, 2.81); p-interaction term = 0.05. Asthma: No significant associations were found for MBzP for asthma.. MBzP had significant odds ratios for a one unit change in phthalate concentration for wheeze in the medium and highest category of endotoxin.No significant associations were found for MBzP for asthma. There was no interaction between endotoxin level and any phthalates with rhinitis or hay fever..	Strassle et. al 2018 4728797 Medium
IQ at age 7	Health Effect: Neurological/Behavioral- full scale IQ-Non-cancer. Outcome measure: Wechsler Intelligence Scale for Chil- dren, 4th edition (WISC-IV)	General public. Pregnant people. Middle childhood (6-11). Sweden; Varmland county. Female, Male. Cohort (Prospective). PESS: Lifestage , Other Chemical and Non- chemical stressors (ex. ex- posure to other substances that affect same organ as test chemical). Lifestage PESS: Children (age 1 year through < 11 years). Swedish Environmental Longitudinal Mother and Child, Asthma and Al- lergy (SELMA) study: 718 mother-child pairs from Varmland county, Swe- den recruited during first trimester. Swedish Environ- mental Longitudinal Mother and Child, Asthma and Al- lergy (SELMA). Recruitment: 2007-2010; Follow-up: child age 7.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Weighted quantile sum regression. Confounders adjusted for: child sex, parity, maternal age, maternal weight, ma- ternal education, maternal IQ (RAVEN), maternal smoking.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI) for an IQR change in the chemical mixture in the full sample explana- tory approach: -2.2 (-3.4, -1.0); weight of MBzP in this model: 6%. Weight of MBzP in WQS regression for the chem- ical mixture was 6% (above the threshold of con- cern), suggesting MBzP is a key chemical of concern driving the observed negative association with IQ.	Tanner et. al 2020 5933606 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
All-cause mortality	Health Effect: Mortality- All-cause mortality, CVD mortality-Non-cancer. Outcome measure: National Death Index	General public. Adults (18+). United States. Female, Male. Cohort (Prospective). PESS: . General population of NHANES adults aged 40 years and older (n=5,303). NHANES. Recruitment: 2001-2010; Follow-up: Through 2015.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at enroll- ment and prior to outcome.	Cox Proportional Haz- ards Model. Con- founders adjusted for: age, race/ethnicity, uri- nary creatinine, education levels, family income status, smoking, alcohol use, physical activity, total energy intake, HEI2010 score, survey year and BMI..	Lowest exposure concentration for a significant adverse health outcome response: Continuous. HR (95 CI) for association between MBzP and all-cause mortality in analysis with survey weights:Continuous (per ln-unit MBzP): 1.11 (1.04, 1.19)Tertile 2 vs. Tertile 1: 1.13 (0.92, 1.40) Tertile 3 vs. Tertile 1: 1.20 (0.96, 1.50). A significant positive association was observed for continuous MBzP and all-cause mortality when ac- counting for survey weights. In unweighted analysis, the continuous association maintained significance and a significant positive association was reported for T3..	Trasande et. al 2021 9495379 Medium
Cancer mortality	Health Effect: Mortality- Cancer mortality-Cancer- Cancer/Carcinogenesis- Cancer mortality-Cancer. Outcome measure: ICD-10 codes C00-C97	General public. Adults (18+). United States. Female, Male. Cohort (Prospective). PESS: . General population of NHANES adults aged 40 years and older (n=5,303). NHANES. Recruitment: 2001-2010; Follow-up: Through 2015.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured at enroll- ment and prior to outcome.	Cox Proportional Haz- ards Model. Con- founders adjusted for: age, race/ethnicity, uri- nary creatinine, education levels, family income status, smoking, alcohol use, physical activity, total energy intake, HEI2010 score, survey year and BMI..	Lowest exposure concentration for a significant adverse health outcome response: T3. HR (95 CI) for MBzP association with cancer mor- tality in analysis with survey weights:Continuous (per ln MBzP): 1.19 (1.04, 1.36)Tertile 2 vs. Tertile 1: 1.17 (0.72, 1.92)Tertile 3 vs. Tertile 1: 1.25 (0.76, 2.05). Significant positive associations were reported for continuous MBzP and cancer mortality in weighted and unweighted analyses..	Trasande et. al 2021 9495379 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Diastolic blood pres- sure z-score	<p>Health Effect: Cardiovascular-Systolic blood pressure, diastolic blood pressure, total cholesterol, HDL-C, LDL-C-Non-cancer.</p> <p>Outcome measure: Measured using an automatic oscillometric device</p>	<p>General public, Pregnant people. Preschool (3-5), Middle childhood (6-11), Adults (18+). Greece; Heraklion, Crete. Female, Male. Cohort (Prospective). PESS: Lifestage Lifestage PESS: Children (age 1 year through < 11 years). Mother-child pairs from the Rhea study who became pregnant within one year from February 2007 (Enrolled n=260 mothers and 500 children; Used in analysis n=202). Rhea Study. Within one year beginning February 2007.</p>	<p>Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Acute (less than 24 hours)</p> <p>Exposure measured concurrently with outcome.</p>	<p>Linear Regression. Confounders adjusted for: child sex, exact age at examination, maternal characteristics (age at delivery, parity, education, pre-pregnancy BMI, smoking in pregnancy).</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: Continuous [geometric mean (SD) child MBzP = 7.4 (3.2) ug/g creatinine]. Beta value (95% CI) for DBP z-score per 10-fold increase child MBzP: in all participants = -0.11 (-0.21, -0.01). Significant negative association between 10-fold increase in child MBzP and DBP z-score. No significant findings when stratified by sex. No significant findings for other cardiovascular outcomes and child MBzP.</p>	<p>Vafeiadi et. al 2018 5041285 Medium</p>

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
CPT-3 and CPT-II scores for attention	Health Effect: Neurological/Behavioral- Conners' Continuous Performance Test, Second Edition (CPT-II) at age 6-11 years and an updated version of the Conners' CPT (CPT-3) at age 9-18 years-Non-cancer- Reproductive/Developmental- Conners' Continuous Performance Test, Second Edition (CPT-II) at age 6-11 years and an updated version of the Conners' CPT (CPT-3) at age 9-18 years-Non-cancer. Outcome measure: CPT-3 computer assessment	General public. Middle childhood (6-11), Teens (12-17), Adults (18+). Mexico; Mexico City. Female, Male. Cohort (Prospective), Cross-Sectional. PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). Mother-child pairs from the ELEMENT cohort (n = 491 in cross-sectional analy- sis). Early Life Exposure in Mexico to Environmental Toxicants (ELEMENT) co- hort study. Recruitment: 1997-2004; Follow-up at child age 6-11 years and 9-18 years..	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during preg- nancy and during adolescence (ages 9-18).	Linear Regression. Con- founders adjusted for: child age at second follow-up visit, sex, years in school, maternal ed- ucation, urinary specific gravity.	Lowest exposure concentration for a significant adverse health outcome response: continuous; GM (GSD) MBzP among adolescents = 3.49 (2.74) ug/L. No descriptive data for prenatal phthalate measures.. Percent change (95% CI) in CPT-3 scores per IQR increase in prenatal MBzP: Omissions: 4.2 (0.3, 8.2)Percent change (95% CI) in CPT-3 scores per IQR increase in first trimester prenatal MBzP: HRT block change: 3.0 (0.6, 5.5). Significant positive associations for Omissions CPT-3 scores at adolescence in analyses with ma- ternal urinary MBzP. When results were stratified by trimester-specific MBzP, direction of effect was maintained by results were not significant for Omis- sions. However, first-trimester MBzP was positive associated with HRT block change scores in adoles- cence (positive but not significant when all trimesters were combined). Other indices were not significant..	Watkins et. al 2021 8348423 Medium
resting state fMRI mea- sures [mean fractional amplitude of low- frequency fluctuation (mfALFF) and mean regional ho- mogeneity (mReHo)]	Health Effect: Neurological/Behavioral- Resting state fMRI mea- sures: mean fractional am- plitude of low-frequency fluctuation (mfALFF) and mean regional homogeneity (mReHo) in multiple brain regions.-Non-cancer. Outcome measure: func- tional MRI imaging col- lected in the resting state	General public. Teens (12-17). Taiwan. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Adolescents (age 11 years through < 21 years). 59 teenagers (33 boys, 26 girls) from Taiwan, mean age 13.95 years. The Taiwan Maternal and Infant Cohort Study (TMICS). Recruitment 2000 to 2001; Follow-up 2015.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Linear Regression. Con- founders adjusted for: Family income, gender.	Lowest exposure concentration for a significant adverse health outcome response: Continuous. MBzP association with:-lower mfALFF in left and right anterior cingulum gyrus in girls ($p<0.025$) - lower mReHo in the right insula in girls ($p<0.04$). Higher maternal 3rd trimester MBzP concentrations were associated with lower activity in the left and right anterior cingulum gyrus in girls, and with lower homogeneity in right insula in girls..	Weng et. al 2020 6718530 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Body mass index trajectory	Health Effect: Nutritional/Metabolic-Body Mass Index trajectory-Non-cancer. Outcome measure: Measured by research personnel	General public, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Middle childhood (6-11), Teens (12-17), Adults (18+). Mexico; Mexico City. Male. Cohort (Prospective). PESS: Lifestage , Sociodemographic Status (ex. race/ethnicity, socioeconomic). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). ELEMENT birth cohort (n=239) of moderate-to-low income residents of Mexico City. Early Life in Mexico to Environmental Toxicants (ELEMENT). Recruitment: 1997 - 2005; Follow-up: 2006-2012.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Mixed effects models. Confounders adjusted for: maternal years of education, maternal BMI 1-month postpartum.	Lowest exposure concentration for a significant adverse health outcome response: Tertiles of MBzP [specific range per tertile not provided; GM (SD) in males = 4.3 (2.5) ng/mL; GM (SD) in females = 4.1 (2.7) ng/mL]. Likelihood ratio test results (-2LL using full model) for MBzP in males: 3372.6, p=0.003. Likelihood ratio test showed better fit for models in boys that included MBzP. There were not extreme differences in trajectory by prenatal MBzP tertile, but "Exposure to the first tertile of....MBzP predicted the lowest BMI trajectory in early childhood but crossed over to predict the highest BMI by age 14." Sensitivity was reduced for ages past 5..	Yang et. al 2018 4728873 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Wechsler Preschool and Primary Scale of Intelligence (Chinese version) scores: 5 subscales: verbal comprehension index, visual space index, fluid reasoning index, working memory index, processing speed index.	Health Effect: Neurological/Behavioral-Intelligent quotient (IQ) scores-Non-cancer- Reproductive/Developmental- Intelligent quotient (IQ) scores-Non-cancer. Outcome measure: 2 examiners trained by licensed clinical psychologist administered Wechsler IQ test. Raw data submitted to blinded researcher for calculation of each participant's IQ scores.	General public, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Middle childhood (6-11). China; Ma'anshan. Female, Male. Cohort (Prospective). PESS: Lifestage , Studies focusing on reproductive parameters. Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). Pregnant women from Ma'anshan Birth Cohort recruited during pregnancy (n=2128). Ma'anshan Birth Cohort (MABC). Recruitment: 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Exposure measured during pregnancy. Infant exposure measured at 42 days, 3 months, 6 months, 9 months, and 12 months. Children followed up continuously from age 1.5 every 6 months until age 6..	Linear mixed model. Confounders adjusted for: maternal age, maternal IQ, pre-pregnancy BMI, parity, household income, sunscreen use, pregnancy willingness, breastfeeding duration, urinary creatinine concentration.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficient (95% CI) per 1 ln-transformed unit increase for following subscales. Maternal MBzP (Total), VCI: 0.23 (0.01, 0.44), p=0.04. Maternal MBzP (boys), VCI: 0.45 (0.14, 0.076), p<0.01. Maternal MBzP (third trimester), VCI: 0.48 (0.03, 0.92), p=0.04.. Every ln-unit increase in maternal MBzP (total) was associated with a 0.23 point increase in VCI. Every ln-unit increase in maternal MBzP among boys was associated with a 0.45 point increase in VCI. Every ln-unit increase in maternal MBzP for the third trimester is associated with a 0.48 point increase in VCI..	Zhu et. al 2020 9644525 Medium
hemoglobin levels	Health Effect: Immune/Hematological- Hemoglobin (Hb) concentrations, anemia-Non-cancer. Outcome measure: Medical Records	Pregnant people. Adults (18+). China; Ma'anshan. Female. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Chinese pregnant women from Ma'anshan Birth Cohort (n = 3269). Ma'anshan Birth Cohort Study (MABC). 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured throughout pregnancy.	Linear mixed model. Confounders adjusted for: maternal age, gestational age, pre-pregnant BMI, education, occupation, smoking, serum iron concentration, nutritional supplements (folic acid, vitamins, iron) before conception and pregnancy, creatinine..	Lowest exposure concentration for a significant adverse health outcome response: continuous. beta (95% CI) per 1 ln MBzP and Hb: -0.19 (-0.33, -0.05). Significant inverse relationship in repeated measures model, where 1 ln unit increase in MBzP was associated with a decrease in maternal hemoglobin. The magnitude of association was stronger in boys, non-significant in girls..	Zhu et. al 2018 4829283 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
hemoglobin levels	Health Effect: Immune/Hematological- Hemoglobin (Hb) concentrations, anemia-Non-cancer. Outcome measure: Medical Records	Pregnant people. Adults (18+). China; Ma'anshan. Female. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Chinese pregnant women with male fetus' from Ma'anshan Birth Cohort (n = 1667). Ma'anshan Birth Cohort Study (MABC). 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured in each trimester of pregnancy.	Linear Regression. Confounders adjusted for: maternal age, gestational age, prepregnant BMI, education, occupation, smoking, serum iron concentration, nutritional supplements (folic acid, vitamins, iron) before conception and pregnancy, creatinine..	Lowest exposure concentration for a significant adverse health outcome response: continuous. beta (95% CI) per 1 ln MBzP and Hb: -0.35 (-0.65, -0.06). Significant association between phthalate metabolite and decreased hemoglobin levels in the third trimester. Association significant in boys, and in the second trimester..	Zhu et. al 2018 4829283 Medium
anemia	Health Effect: Immune/Hematological- Hemoglobin (Hb) concentrations, anemia-Non-cancer. Outcome measure: Medical Records	Pregnant people. Adults (18+). China; Ma'anshan. Female. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Chinese pregnant women with male fetus' from Ma'anshan Birth Cohort (n = 1667). Ma'anshan Birth Cohort Study (MABC). 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured in each trimester of pregnancy.	Logistic Regression. Confounders adjusted for: maternal age, gestational age, prepregnant BMI, education, occupation, smoking, serum iron concentration, nutritional supplements (folic acid, vitamins, iron) before conception and pregnancy, creatinine..	Lowest exposure concentration for a significant adverse health outcome response: continuous. OR (95% CI) for MBzP and anemia: 1.09 (1.01,1.16). Significant association between phthalate metabolite and increased risk for anemia in the third trimester overall and in boys. Also significant in the first trimester, overall and in boys..	Zhu et. al 2018 4829283 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP)

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
anemia	Health Effect: Immune/Hematological- Hemoglobin (Hb) concentrations, anemia-Non-cancer. Outcome measure: Medical Records	Pregnant people. Adults (18+). China; Ma'anshan. Female. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth). Chinese pregnant women from Ma'anshan Birth Cohort (n = 3269). Ma'anshan Birth Cohort Study (MABC). 2013-2014.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured throughout pregnancy.	Generalized linear mixed model. Confounders adjusted for: maternal age, gestational age, prepregnant BMI, education, occupation, smoking, serum iron concentration, nutritional supplements (folic acid, vitamins, iron) before conception and pregnancy, creatinine..	Lowest exposure concentration for a significant adverse health outcome response: continuous. OR (95% CI) MBzP and anemia: 1.08 (1.01, 1.14). Significant association between MBzP and anemia in repeated measures model, where 1 ln unit increase in MBzP increased the risk of anemia in boys. The association was not significant overall or in girls..	Zhu et. al 2018 4829283 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: monobenzyl phthalate [MBzP]

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
luteinizing hormone; InhibinB; dehy- droepiandro- terone; inducible nitric oxide synthetase	Health Effect: Reproductive/Developmental- Sex hormone levels (luteinizing hormone, follicle-stimulating hormone, sex hormone binding globulin, inhibinB, dehydroepiandrosterone, dehydroepiandrosterone sulfate, androstenedione, estrone, estradiol, total testosterone, free testos- terone, dihydrotestosterone, dihydrotestosterone/total testosterone ratio, estra- diol/total testosterone ratio, estradiol/estrone ratio)- Non-cancer-Other (please specify below) (Oxidative stress/Inflammation)- Oxidative stress/Inflammation (malondialdehyde, inducible nitric oxide synthetase, 8-hydroxy- 2'-deoxyguanosine)- Non-cancer- Reproductive/Developmental- benign prostatic hyperplasia (prostate specific antigen, prostate volume)-Non- cancer. Outcome measure: measured in serum	Patients in clinics. Adults (18+), Older Adults (65+). Taiwan. Male. Cross-Sectional. PESS: Lifesstage , Pre-existing Disease (ex. al- tered metabolism, behaviors, treatments related to condi- tion). Lifesstage PESS: Older adults (age >= 65 years). elderly males from National Cheng Kung University Hos- pital: Taiwan, 207 elderly males with diagnosed BPH, 2015-2017. 2015-2017.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured via biomon- itoring on the same day they were diagnosed.	Linear Regression. Con- founders adjusted for: age, body mass index (modeled continuously), and season during which the blood was collected for hormone analysis. Total testosterone and estradiol were addition- ally adjusted for SHBG. Urinary phthalate metabo- lites and 8-OHdG were additionally adjusted for urinary creatinine (liner).	Lowest exposure concentration for a significant adverse health outcome response: continuous. Regression coefficients for: LH (95% CI): 0.89 (0.84, 0.95); InhibinB (95% CI): 0.92 (0.85, 0.98); DHEA (95% CI): 1.48 (1.31, 1.66); iNOS (95% CI): 1.44 (1.17, 1.77). Multivariate regression coefficients showed signif- icant positive associations between the results for LH, InhibinB, DHEA, and iNOS, but showed non- significant results for FSH, SHBG, AD, E1, E2, TT, FT, DHT, MDA, 8-OHdG, PSA, and prostate volume outcomes..	Chang et. al 2019 5499417 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: monobenzyl phthalate (MBzP)

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Child Behavior Checklist (CBCL) scores: social problems	Health Effect: Neurological/Behavioral-Child Behavior Checklist Scores for internalizing problems (somatic complaints, anxious or depressed, withdrawn) and externalizing problems (delinquent behavior, aggressive behavior)- Non-cancer. Outcome measure: Questionnaire (maternal report)	General public. Toddler (2-3), Preschool (3-5), Middle childhood (6-11), Teens (12-17), Adults (18+). Taiwan. Female, Male. Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Children (age 1 year through < 11 years), Adolescents (age 11 years through < 21 years). 153 mother-child pairs. Taiwan Maternal and Infant Cohort Study. Recruitment: December 1, 2000-November 30, 2001; Follow-up: through 2015.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Chronic (more than 28 days) Maternal exposure measured during 3-rd trimester of pregnancy; child exposure measured at 2-3 yrs, 5-6 yrs and 8-9 yrs.	Linear mixed model. Confounders adjusted for: children's sex, IQ, family income, and study visit.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Beta (95% CI) per 1-unit increase in ln-child MBzP: 0.018 (0.001, 0.035). Significant positive associations for child MBzP and social problems T scores measured at ages 8-14 years, adjusted for maternal MBzP..	Huang et. al 2019 5750709 Medium
uterine fibroids	Health Effect: Reproductive/Developmental-Uterine fibroids-Non-cancer. Outcome measure: diagnosis	General public. Adults (18+). South Korea; Seoul, Ansan, Incheon, Jeju. Female. Case-Control. PESS: . 2015-2016, South Korea, 111 women (20-49 years of age) (32 uterine fibroid cases and 79 controls). 2015-2016.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured via biomonitoring at health examination.	nan. Confounders adjusted for: Adjusted for age, income, parity, urinary cotinine, alcohol consumption, and BMI.	Lowest exposure concentration for a significant adverse health outcome response: continuous. OR (95% CI) for Q2 vs Q1: 4.82 (1.09-21.27). Significance found between cases and controls for MBzP concentrations with increased ORs of uterine fibroids..	Lee et. al 2020 7274600 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP); as part of molar sum of High molecular weight phthalates

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Internalizing problems	Health Effect: Neurological/Behavioral- Behavioral problems-Child Behavior Checklist (CBCL) Internalizing problems, Externalizing problems)- Non-cancer. Outcome measure: Child Behavior Checklist (CBCL) questionnaire	Patients in clinics, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage , Aggregate Exposures (ex. multiple air exposure sources). Lifestage PESS: Pregnant people (parent) or em- bryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). 76 mother-child pairs re- cruited from the APrON study (Enrolled n=84; Used in analysis n = 76). Alberta Pregnancy Outcomes and Nutrition (APrON) Study. Follow-up: 2013-2017.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Un- clear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Multivariate Regression. Confounders adjusted for: child age.	Lowest exposure concentration for a significant adverse health outcome response: continuous. sum (HMWP) and Internalizing Problems with me- diator MD of the right IFO: Beta (95% CI)= 0.09 (0.02, 0.20); sum (HMWP) and Internalizing Prob- lems with mediator MD of the right pyramidal fibers: Beta (95% CI) = 0.11 (0.01, 0.23). Diffusion tensor imaging (DTI) mean diffusivity (MD) of the right inferior fronto-occipital fasciculus (IFO) was a significant mediator of sum(HMWP) prenatal exposure on age 3-5 Child Behavior Check- list (CBCL) Internalizing Problems. DTI MD of the right pyramidal fibers was a significant mediator of sum(HMWP) prenatal exposure on age 3-5 CBCL Internalizing Problems..	England- Mason et. al 2020 6958936 Medium

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Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Mono-benzyl phthalate (MBzP); as part of molar sum of High molecular weight phthalates

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Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/ Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Externalizing problems	Health Effect: Neurological/Behavioral-Behavioral problems-Child Behavior Checklist (CBCL) Internalizing problems, Externalizing problems)-Non-cancer. Outcome measure: Child Behavior Checklist (CBCL) questionnaire	Patients in clinics, Pregnant people. Infant (0-1), Toddler (2-3), Preschool (3-5), Adults (18+). Canada; Alberta. Female, Male. Cohort (Prospective). PESS: Lifestage , Aggregate Exposures (ex. multiple air exposure sources). Lifestage PESS: Pregnant people (parent) or embryo/fetus (developmental) (conception through birth), Infants (birth through < 12 months), Children (age 1 year through < 11 years). 76 mother-child pairs recruited from the APrON study (Enrolled n=84; Used in analysis n = 76). Alberta Pregnancy Outcomes and Nutrition (APrON) Study. Follow-up: 2013-2017.	Biomonitoring Biomonitoring matrix: Urine Exposure Route: Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear Exposure measured during pregnancy.	Multivariate Regression. Confounders adjusted for: child age.	Lowest exposure concentration for a significant adverse health outcome response: continuous. Sum (HMWP) and Externalizing Problems with mediator MD of the right IFO: Beta (95% CI)= 0.09 (0.01, 0.19); Sum (HMWP) and Externalizing Problems with mediator MD of the right pyramidal fibers: Beta (95% CI) = 0.07 (-0.01, 0.20).. Diffusion tensor imaging (DTI) mean diffusivity (MD) of the right inferior fronto-occipital fasciculus (IFO) was a significant mediator of sum(HMWP) prenatal exposure on age 3-5 Child Behavior Checklist (CBCL) Externalizing Problems. DTI MD of the right pyramidal fibers was not a significant mediator of sum(HMWP) prenatal exposure on age 3-5 CBCL Externalizing Problems..	England-Mason et. al 2020 6958936 Medium

Human Health Hazard Epidemiology Extraction

Butyl benzyl phthalate

Metabolite: Monobutyl phthalate (MBP); Mono-benzyl phthalate (MBzP)

Human Health Hazard Epidemiology Extraction Table:

Author Reported Outcome	Measured Effect/Endpoints	Study Population	Exposure	Method	Results	Citation, HERO ID, and OQD*
Asthma, atopy	<p>Health Effect: Lung/Respiratory- Asthma-Non-cancer- Immune/Hematological- Immunoglobulin E (IgE) levels to inhalant allergens- Non-cancer.</p> <p>Outcome measure: Asthma: physician diagnosis; atopy: immunoglobulin E levels against inhalant allergens</p>	<p>General public, Pregnant people. Preschool (3-5), Middle childhood (6-11), Adults (18+). Germany; Leipzig. Female, Male.</p> <p>Cohort (Prospective). PESS: Lifestage . Lifestage PESS: Children (age 1 year through < 11 years). Mother-child pairs in Leipzig, Germany (n=371 pairs). Lifestyle and Environmental Factors and Their Influence on Newborns Allergy Risk (LINA) cohort. Recruitment: during pregnancy 2006-2008; Follow-up: through child age 6.</p>	<p>Biomonitoring Biomonitoring matrix: Urine</p> <p>Exposure Route: Unclear/Uncertain (dust, biomarker without indication of exposure route, etc.) Unclear</p> <p>Exposure measured during pregnancy.</p>	<p>Logistic Regression. Confounders adjusted for: child gender, siblings, smoking during pregnancy, environmental tobacco smoke after birth, cat keeping, parental history of atopy, parental education level.</p>	<p>Lowest exposure concentration for a significant adverse health outcome response: continuous. OR (95% CI) for a 100 ng/mg unit increase of MnBP: Asthma: 1.24 (1.02, 1.50)Atopy: 1.21 (1.04, 1.41).</p> <p>Significant positive associations between MnBP and both asthma and atopy. No significant associations with MBzP..</p>	<p>Jahreis et. al 2018 5490441 Medium</p>