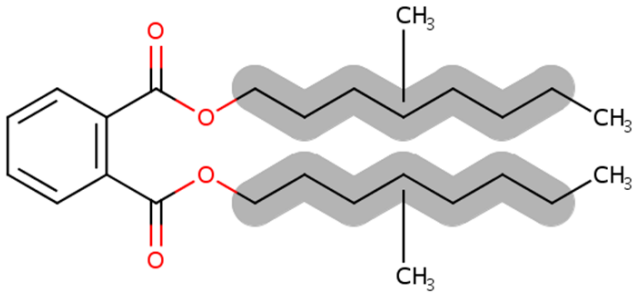
United States
Environmental Protection Agency

January 2025
Office of Chemical Safety and
Pollution Prevention

Data Quality Evaluation and Data Extraction Information for Physical and Chemical Properties for Diisononyl Phthalate (DINP)

Systematic Review Support Document for the Risk Evaluation

CASRNs: 28553-12-0 and 68515-48-0



January 2025

This supplemental file contains information regarding the data extraction and evaluation results for data sources that were considered for the *Risk Evaluation for Diisononyl Phthalate (DINP)* and that underwent systematic review. 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'). The systematic review steps are further described in the *Risk Evaluation for Diisononyl Phthalate (DINP) – Systematic Review Protocol*. EPA conducted data extractions and data quality evaluations based on author-reported descriptions and results; additional analyses (*e.g.*, statistical analyses) potentially conducted by EPA are not contained in this supplemental file. Additionally, the overall quality determination (OQD) for each reference represents the data as a whole for each study, and not for individual metric domains within a study.

Table of Contents

2441673 ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006. **72**

7325002 ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-“isononyl” phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2]. **73**

3688079 EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18. **74**

807140 Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173. **75**

5926163 NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0. **76**

6629895 NLM, (2020). PubChem database: compound summary: Diisodecyl phthalate. **77**

679849 NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47. **78**

680097 NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90. **79**

5348358 O’Neil, M. J. (2013). Diisononyl phthalate. :517. **81**

7415500 RSC, (2019). ChemSpider: Diisononyl phthalate (DINP). **82**

Water Solubility

675060 Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39. **83**

3688004 EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0. **84**

5353181 EC/HC, (2017). Draft screening assessment: Phthalate substance grouping. **86**

679967 ECETOC, (1985). An assessment of the occurrence and effects of dialkyl ortho-phthalates in the environment. **87**

2441673 ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006. **88**

7325002 ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-“isononyl” phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2]. **89**

3688079 EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18. **90**

679985 Howard, P. H., Banerjee, S., Robillard, K. H. (1985). Measurement of water solubilities octanol-water partition coefficients and vapor pressures of commercial phthalate esters. Environmental Toxicology and Chemistry 4(5):653-662. **91**

5348351 Letinski, D. J., Jr, Connelly, M. J., Peterson, D. R., Parkerton, T. F. (2002). Slow-stir water solubility measurements of selected alcohols and diesters. Chemosphere 43(3):257-265. **93**

807140 Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173. **94**

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Physical Form or State
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
CASRN and Test Material	28553-12-0 and 68515-48-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; Liquid; NR
Results Value	Liquid
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to: European Commission. 2000. IUCLID Dataset. Ispra (IT): European Commission, Joint Research Centre, Institute for Health and Consumer Protection, European Chemicals Bureau.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Physical Form or State
HERO ID:	7325002

EXTRACTION

Parameter	Data
CASRN and Test Material	28533-12-0 and 68515-48-0; Not Reported
Confidentiality, Type, and Guideline	No; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Results Value	Clear colorless liquid
Results Details	Measured, Ph. Eur. 2.2.1. and 2.2.2.

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	ExxonMobil, (2001). JAYFLEX® Plasticizers: Jayflex DINP Plasticizer: Diisononyl Phthalate.
OECD Harmonized Template:	Physical Form or State
HERO ID:	1239562

EXTRACTION

Parameter	**Data**
CASRN and Test Material	68515-48-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; BRCP 4065
Solvent, Reactivity, Storage, and Stability	NA; NA; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Clear and Free; Not Reported
Results Value	Clear and Free
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47.
OECD Harmonized Template:	Physical Form or State
HERO ID:	679849

EXTRACTION

Parameter	**Data**
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	No; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Value	liquid
Results Details	oily, viscous liquid at standard temperature and pressure

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

Study Citation:	OSHA, (2017). Diisononyl phthalate chemical sampling information.
OECD Harmonized Template:	Physical Form or State
HERO ID:	3688043

EXTRACTION

Parameter	**Data**
CASRN and Test Material	28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; NA
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Results Value	oily viscous liquid
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Results Value	liquid
Results Details	colorless liquid

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available and peer-reviewed database.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Haynes, W.M. (Ed.) 2014. CRC Handbook of Chemistry and Physics. CRC Press LLC, Boca Raton: FL 2014. p. 3-194.

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5348358

EXTRACTION

Parameter	Data
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Results Value	liquid
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized data collection where data are peer-reviewed by experts in the field.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Results Details	oily colorless liquid

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available and peer-reviewed database.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Haynes, W.M. (Ed.) 2014. CRC Handbook of Chemistry and Physics. CRC Press LLC, Boca Raton: FL 2014. p. 3-194.

Study Citation:	Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39.
OECD Harmonized Template:	Melting Point
HERO ID:	675060

EXTRACTION

Parameter	**Data**
Melting Point	-48 °C
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cousins, I. T., Mackay, D., Parkerton, T. F.. Physical-chemical properties and evaluative fate modelling of phthalate esters. The Handbook of Environmental Chemistry, vol 3Q. 2003. 3:57-84.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Melting Point
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Melting Point	-54 - -34 °C
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; Liquid; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to: European Commission. 2000. IUCLID Dataset. Ispra (IT): European Commission, Joint Research Centre, Institute for Health and Consumer Protection, European Chemicals Bureau.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Melting Point
HERO ID:	2441673

EXTRACTION

Parameter	Data
Melting Point	ca -50 °C
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; calculation; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Melting Point
HERO ID:	7325002

EXTRACTION

Parameter	**Data**
Melting Point	-54 deg C
CASRN and Test Material	28533-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; ASTM D 97-02
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Results Details Methods	at 1 atm
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination NEED TO FIX

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18.
OECD Harmonized Template:	Melting Point
HERO ID:	3688079

EXTRACTION

Parameter	**Data**
Melting Point	ca. -50 °C
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	Medium	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

Study Citation:	Lundberg, G., Nilsson, C. (1994). Phthalic acid esters used as plastic additives: Volume 1. Ecotoxicological risk assessment, Volume 2. Comparisons of toxicological effects. GRA and I(GRA and I):284.
OECD Harmonized Template:	Melting Point
HERO ID:	680058

EXTRACTION

Parameter	**Data**
Melting Point	-49 - -48 °C
CASRN and Test Material	28553-12-0 and 68515-48-0; diisononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR Notes: DINP
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

* Related References: References BASF sicherheitsblatt-march 1983 and Jayflex (Esso) varuinformation 1980.

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Melting Point
HERO ID:	6629861

EXTRACTION

Parameter	**Data**
Melting Point	-43 °C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: ILO International Chemical Safety Cards (ICSC)

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Melting Point
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
Melting Point	-48 °C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a recognized data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 598

Study Citation:	NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47.
OECD Harmonized Template:	Melting Point
HERO ID:	679849

EXTRACTION

Parameter	**Data**
Melting Point	-48 - deg C
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	No; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	NR
Standard Deviation Results	NR
Results Details	NR

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID 675437.

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	Melting Point
HERO ID:	680097

EXTRACTION

Parameter	Data
Melting Point	-48 °C
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl Phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Cited source: Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: Aliterature review. Chemosphere 35:667-749(1997). HERO ID: 675437

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Melting Point
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Melting Point	-48 °C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	RSC, (2019). ChemSpider: Diisononyl phthalate (DINP).
OECD Harmonized Template:	Melting Point
HERO ID:	7415500

EXTRACTION

Parameter	**Data**
Melting Point	-48 - °C
CASRN and Test Material	Not Reported; DINP
Confidentiality, Type, and Guideline	None; Not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	NA
Standard Deviation Results	NA
Results Details	NA

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available secondary source with references to non-peer reviewed sources; however, the value was also cited to a trusted database, Physprop, under CAS 28553-12-0.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Citing Jean-Claude Bradley Open Melting Point Dataset, which cites Physprop (for CAS 28553-12-0).

Study Citation:	Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39.
OECD Harmonized Template:	Boiling Point
HERO ID:	675060

EXTRACTION

Parameter	**Data**
Boiling Point	> 400 - C
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

* Related References: reference is given as EU RA with no further information

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Boiling Point
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Boiling Point	> 400 C
CASRN and Test Material	68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; Liquid; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: European Chemicals Agency. 2014. Registered Substances database. Search results for CAS RNs [28553-12-0 and 68515-48-0]. Helsinki (FI): ECHA.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Boiling Point
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Boiling Point	331 - 341 C
CASRN and Test Material	28553-12-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; Liquid; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to: European Chemicals Agency. 2014. Registered Substances database. Search results for CAS RNs [28553-12-0 and 68515-48-0]. Helsinki (FI): ECHA.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Boiling Point
HERO ID:	2441673

EXTRACTION

Parameter	Data
Boiling Point	> 400 - C
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Boiling Point
HERO ID:	7325002

EXTRACTION

Parameter	**Data**
Boiling Point	> 400 - °C
CASRN and Test Material	28533-12-0 and 68515-48-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; calculation; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Standard Deviation Results	Not Reported
Results Details	at 1 atm

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18.
OECD Harmonized Template:	Boiling Point
HERO ID:	3688079

EXTRACTION

Parameter	**Data**
Boiling Point	> 400 - C
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

Study Citation:	Lundberg, G., Nilsson, C. (1994). Phthalic acid esters used as plastic additives: Volume 1. Ecotoxicological risk assessment, Volume 2. Comparisons of toxicological effects. GRA and I(GRA and I):284.
OECD Harmonized Template:	Boiling Point
HERO ID:	680058

EXTRACTION

Parameter	**Data**
Boiling Point	252 C
CASRN and Test Material	28553-12-0 and 68515-48-0; diisononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR Notes: DINP
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

* Related References: References: Jayflex (Esso) varuinformation 1980

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Boiling Point
HERO ID:	6629861

EXTRACTION

Parameter	**Data**
Boiling Point	78 C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Standard Deviation Results	Not Reported
Results Details	reported as 172 F at 760 mm Hg

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	Low	Data measured for a structural analogue of the subject chemical substance are not consistent with the subject chemical substance structural properties, features or behaviors, or the structural features or behaviors of the subject chemical substance are uncertain.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: U.S. Coast Guard. 1999. Chemical Hazard Response Information System (CHRIS) - Hazardous Chemical Data. Commandant Instruction 16465.12C. Washington, D.C.: U.S.Government Printing Office.

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Boiling Point
HERO ID:	6629861

EXTRACTION

Parameter	**Data**
Boiling Point	244 - 252 C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Standard Deviation Results	Not reported
Results Details	at 0.7 kPa

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) [and/or] other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: ILO International Chemical Safety Cards (ICSC)

Study Citation:	NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47.
OECD Harmonized Template:	Boiling Point
HERO ID:	679849

EXTRACTION

Parameter	**Data**
Boiling Point	370 deg C
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	No; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Standard Deviation Results	NR
Results Details	NR

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID 675437.

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	Boiling Point
HERO ID:	680097

EXTRACTION

Parameter	Data
Boiling Point	370 C
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl Phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID: 675437

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Boiling Point
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Boiling Point	252 C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Standard Deviation Results	Not Reported
Results Details	at 5 torr

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Density
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Density	0.967 - 0.983 g/cm3
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Density Type	density
System	Not Reported
Temperature	Not Reported
Standard Deviation Results	Not Reported
Results Details	reported as 967-983 kg/m3

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to: European Commission. 2000. IUCLID Dataset. Ispra (IT): European Commission, Joint Research Centre, Institute for Health and Consumer Protection, European Chemicals Bureau.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Density
HERO ID:	2441673

EXTRACTION

Parameter	**Data**
Density	ca 0.975
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Density Type	density
System	Not Reported
Temperature	20°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Density
HERO ID:	7325002

EXTRACTION

Parameter	Data
Density	0.97 g/cm³
CASRN and Test Material	28533-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; OECD TG 109
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Density Type	density
System	Not Reported
Temperature	20 °C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18.
OECD Harmonized Template:	Density
HERO ID:	3688079

EXTRACTION

Parameter	**Data**
Density	ca. 0.975
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; Not Reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Density Type	density
System	Not Reported
Temperature	20°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

Study Citation:	ExxonMobil, (2001). JAYFLEX® Plasticizers: Jayflex DINP Plasticizer: Diisononyl Phthalate.
OECD Harmonized Template:	Density
HERO ID:	1239562

EXTRACTION

Parameter	**Data**
Density	0.971 - 0.975
CASRN and Test Material	68515-48-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; BRCP 4843
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Density Type	Specific Gravity
System	BRCP 4843
Temperature	20 C/20 C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	Lundberg, G., Nilsson, C. (1994). Phthalic acid esters used as plastic additives: Volume 1. Ecotoxicological risk assessment, Volume 2. Comparisons of toxicological effects. GRA and I(GRA and I):284.
OECD Harmonized Template:	Density
HERO ID:	680058

EXTRACTION

Parameter	**Data**
Density	0.972 - 0.975 g/cm3
CASRN and Test Material	28553-12-0 and 68515-48-0; diisononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR Notes: DINP
Density Type	density
System	Not Reported
Temperature	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

* Related References: References BASF sicherheitsblatt-march 1983 and Jayflex (Esso) varuinformation 1980.

Study Citation:	NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47.
OECD Harmonized Template:	Density
HERO ID:	679849

EXTRACTION

Parameter	**Data**
Density	0.97
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	No; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Density Type	Density
System	NR
Temperature	NR
Standard Deviation Results	NR
Results Details	specific gravity

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID 675437.

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	Density
HERO ID:	680097

EXTRACTION

Parameter	Data
Density	= 0.97 -
CASRN and Test Material	Not Reported; Di-isononyl Phthalate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Density Type	Specific Gravity
System	not specified
Temperature	not specified
Standard Deviation Results	not specified
Results Details	not specified

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Cited source: Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: Aliterature review. Chemosphere 35:667-749(1997). HERO ID: 675437

Study Citation:	Lorenzi, De, L., Fermeglia, M., Torriano, G. (1998). Density, kinematic viscosity, and refractive index for bis(2-ethylhexyl) adipate, tris(2-ethylhexyl) trimellitate, and diisononyl phthalate. Journal of Chemical and Engineering Data 43(2):183-186.
OECD Harmonized Template:	Density
HERO ID:	1325695

EXTRACTION

Parameter	**Data**
Density	0.97578 g/cm3
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Aldrich; NR; 99% mixture of C9 isomers, 0.15% maximum impurity (dioctyl phthalate) Notes: No further purification.
Temperature	293.15 K
Standard Deviation Results	Not Reported
Results Details	Interpolated value at 293.15 K. Value derived from measurements taken between 287.90 through 366.12 K. Density experimental data (g cm-3): 0.97943 at 287.90 K, 0.97187 at 298.15 K, 0.96607 at 308.22 K, 0.95739 at 318.10 K, 0.95003 at 328.17 K, 0.94308 at 338.44 K, 0.93674 at 348.01 K, 0.92889 at 358.91 K, 0.92396 at 366.12 K.

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Density
HERO ID:	6629861

EXTRACTION

Parameter	**Data**
Density	0.98
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	none; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	Not Reported
Standard Deviation Results	Not reported
Results Details	relative density: water = 1

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: ILO International Chemical Safety Cards (ICSC)

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Density
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
Density	0.972 g/cm3
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	20 deg C
Standard Deviation Results	Not Reported
Results Details	20 deg C

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 598

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Density
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Density	0.972 g/cm3
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	20°C
Standard Deviation Results	Not Reported
Results Details	at 20°C relative to water at 20°C

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	675060

EXTRACTION

Parameter	**Data**
Vapor Pressure	6.8X10-6 Pa
CASRN and Test Material	28553-12-0 and 68515-48-0; id-isononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Temperature	Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cousins, I. T., Mackay, D., Parkerton, T. F.. Physical-chemical properties and evaluative fate modelling of phthalate esters. The Handbook of Environmental Chemistry, vol 3Q. 2003. 3:57-84.

Study Citation:	CPSC, (2010). Toxicity review of Diisononyl Phthalate (DINP).
OECD Harmonized Template:	Vapor Pressure
HERO ID:	1987625

EXTRACTION

Parameter	Data
Vapor Pressure	5x10^-7 mm Hg
CASRN and Test Material	28553-12-0 and 68515-48-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	NR
System	NR
Standard Deviation Results	NR
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	Medium	Data measured for a structural analogue of the subject chemical substance are consistent with what is expected for the subject chemical substance structural properties, features or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID 675437.

Study Citation:	CPSC, (2015). Exposure assessment: Composition, production, and use of phthalates.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5155508

EXTRACTION

Parameter	**Data**
Vapor Pressure	6x10-8 - 3.8x10-5 kPa
CASRN and Test Material	28553-12-0 and 68515-48-0; di-iso-nonyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	20˚C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	The data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Data are consistent with other reported physical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a secondary source without peer-review.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cal EPA (California Environmental Protection Agency), 2013. Evidence on the carcinogenicity of Diisononyl Phthalate (DINP). Office of Environmental Health Hazard Assessment's (OEHHA), Reproductive and Cancer Hazard Assessment Branch. Cal EPA, California, 2013.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Vapor Pressure	6.7X10-5 Pa
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	25°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to HEROID: 675437 Staples CA, Peterson DR, Parkerton TF, Adams WJ. 1997. The environmental fate of phthalate esters: A literature review. Chemosphere 35(4):667-749.HEROID: 534354 Mackay D, Shiu WY, Ma KC, Lee SC. 2006. Handbook of physical-chemical properties and environmental fate for organic chemicals. 2nd edition. Volume III. Oxygen containing compounds. Boca Raton (FL): CRC Press, Taylor & Francis Group.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Vapor Pressure	6.0X10-5 Pa
CASRN and Test Material	68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to: European Chemicals Agency. 2014. Registered Substances database. Search results for CAS RNs [28553-12-0 and 68515-48-0]. Helsinki (FI): ECHA.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	2441673

EXTRACTION

Parameter	Data
Vapor Pressure	6x10-5 Pa
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Vapor Pressure
HERO ID:	7325002

EXTRACTION

Parameter	**Data**
Vapor Pressure	0.00006 Pa
CASRN and Test Material	28533-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; NR
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	20 °C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	3688079

EXTRACTION

Parameter	**Data**
Vapor Pressure	6.10-5 Pa
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Reported as 6.10-5 Pa at 20 °C. Assumed a typo and should have been 6.10E-5 Pa at 20 °C.

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

Study Citation:	Howard, P. H., Banerjee, S., Robillard, K. H. (1985). Measurement of water solubilities octanol-water partition coefficients and vapor pressures of commercial phthalate esters. Environmental Toxicology and Chemistry 4(5):653-662.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	679985

EXTRACTION

Parameter	Data
Vapor Pressure	5.4E-7 mm Hg
CASRN and Test Material	28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; If more than one manufacturer produced the individual PAE, the PAE product provided to us was an equal-proportion blend
Radiolabel, Source, State, and Purity	NR; Provided to Chemical Manufacturers' Association by U.S. manufacturers.; NR; Each sample contained less than 1 % of non-PAE material, as determined by another laboratory. Notes: mixture of 4 isomers at 26% C18, 8% C18, 28% C18, and 38% C18-19
Temperature	25°C
System	Measured by the gas saturation method: U.S. Environmental Protection Agency. 1980. Environmental test standards: Proposed rules. Vapor pressure. Fed. Reg. 45:77345-77350.
Standard Deviation Results	0.9E-5
Results Details	Value reported as 7.2E-5 Pa

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) and other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	Peer-reviewed journal article with results compared to other literature values.
	Metric 4:	Reliability/Analytical Method	High	Standard method used with experimental details reported.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	807140

EXTRACTION

Parameter	Data
Vapor Pressure	1.28X10-5 Pa
CASRN and Test Material	28553-12-0; diisononyl phthalate
Confidentiality, Type, and Guideline	none; QSAR; Quantitative Structure-Property relationship model for estimation of solubility in air
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	Not Reported
System	Predictive model developed using gas law: S(A) = P(liquid substance)/RT where R= gas constant (8.314 Pa m-3 mol-1 K-1) and T = absolute temperature (298K); Log S(A) = -0.2324 - 0.3215 (Lu)
Standard Deviation Results	Not Reported
Results Details	Log S(A): n = 15; correlation coefficient (R) = 0.9461; standard error (SE) = 0.27; leave-one-out cross validation correlation coefficient (Rsv) = 0.9218; corresponding standard errors (scv) = 0.34

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	High	The model had a defined, unambiguous endpoint AND the model performance was known and r2 $>$ 0.7, q2 $>$ 0.5, and SE $<$ 0.3 (ECHA, 2016).

Overall Quality Determination High

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
Vapor Pressure	5.4E-7 mm Hg
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	25°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Howard, P.H. et al. 1985. Environ Toxicol Chem 4: 653-61

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Vapor Pressure	0.0018 mm Hg
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	100°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Vapor Pressure	0.50 mm Hg
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	200°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Vapor Pressure	40 mm Hg
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	300°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	OSHA, (2017). Diisononyl phthalate chemical sampling information.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	3688043

EXTRACTION

Parameter	Data
Vapor Pressure	< 0.01 Pa
CASRN and Test Material	28553-12-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	20C
System	not reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

Study Citation:	Tomar, R. S., Budroe, J. D., Cendak, R. (2013). Evidence of the carcinogenicity of diisononyl phthalate (DINP).
OECD Harmonized Template:	Vapor Pressure
HERO ID:	2349610

EXTRACTION

Parameter	**Data**
Vapor Pressure	6x10^-8 - 3.8×10^-5 KPa
CASRN and Test Material	28553-12-0 and 68515-48-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; Calculation; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20o C
System	NR
Standard Deviation Results	Not Reported
Results Details	5.4×10^-7 mm Hg (25 deg C) also reported citing U.S. EPA (2005a). Revised Technical Review of Diisononyl Phthalate. Office of Environmental Information, Environmental Analysis Division, Analytical Support Branch. March 2005.

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	Medium	Data measured for a structural analogue of the subject chemical substance are consistent with what is expected for the subject chemical substance structural properties, features or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing CPSC (2010). Consumer Product Safety Commission. Toxicity review of diisononyl phthalate (DINP) HERO ID: 1987625.

Study Citation:	Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39.
OECD Harmonized Template:	logKow
HERO ID:	675060

EXTRACTION

Parameter	**Data**
log k_{ow}	8.6
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cousins, I. T., Mackay, D., Parkerton, T. F.. Physical-chemical properties and evaluative fate modelling of phthalate esters. The Handbook of Environmental Chemistry, vol 3Q. 2003. 3:57-84.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	logKow
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
log k_{ow}	8.8 - 9.7
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

⋆ Related References: referenced to: European Chemicals Agency. 2014. Registered Substances database. Search results for CAS RNs [28553-12-0 and 68515-48-0]. Helsinki (FI): ECHA.

Study Citation:	EC/HC, (2017). Draft screening assessment: Phthalate substance grouping.
OECD Harmonized Template:	logKow
HERO ID:	5353181

EXTRACTION

Parameter	**Data**
log k_{ow}	>= 8.8 - <= 9.7
CASRN and Test Material	68515-48-0 and 28553-12-0; Dibutyl phthalate
Confidentiality, Type, and Guideline	none; experimental; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	not specified
System	not specified
pH	not specified
Results Details Method	not specified
Standard Deviation Results	not specified
Results Details	not specified

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Source cited: ECHA c2007-2015b

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	logKow
HERO ID:	2441673

EXTRACTION

Parameter	Data
log k_{ow}	8.8
CASRN and Test Material	28553-12-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	logKow
HERO ID:	7325002

EXTRACTION

Parameter	Data
log k_{ow}	8.8 - 9.7
CASRN and Test Material	28533-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; OECD TG 117
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	25 °C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18.
OECD Harmonized Template:	logKow
HERO ID:	3688079

EXTRACTION

Parameter	**Data**
log k_{ow}	8.8
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

Study Citation:	Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173.
OECD Harmonized Template:	logKow
HERO ID:	807140

EXTRACTION

Parameter	Data
log k_{ow}	8.52
CASRN and Test Material	28553-12-0; diisononyl phthalate
Confidentiality, Type, and Guideline	none; QSAR; Quantitative Structure-Property relationship model for estimation of log Kow
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	not applicable
System	QSPR model using the Lu index, which is based on the shortest distance matrix.
pH	not applicable
Results Details Method	Predictive model developed using Lu index: Log Kow = -4.7875 + 0.5315 (Lu)
Standard Deviation Results	Not Reported
Results Details	n = 15; correlation coefficient (R) = 0.9836; standard error (SE) = 0.40; leave-one-out cross validation correlation coefficient (Rsv) = 0.9784; corresponding standarderrors (scv) = 0.47

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	Uninformative	The QSPR model failed the standard error threshold of <0.3 and is therefore rated unacceptable.

Overall Quality Determination — Medium

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	logKow
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
log k_{ow}	9.37
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available database that provides references to a peer-reviewed source.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 598

Study Citation:	NLM, (2020). PubChem database: compound summary: Diisodecyl phthalate.
OECD Harmonized Template:	logKow
HERO ID:	6629895

EXTRACTION

Parameter	**Data**
log k_{ow}	10.36
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Not reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	Medium	Data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors; however this is estimated data.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	N/A	This metric is not applicable to this calculated data.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	This metric is not applicable to this calculated data.

Overall Quality Determination Medium

⋆ Related References: US EPA; Estimation Program Interface (EPI) Suite. Ver.3.12. Nov 30, 2004. Available from, as of Apr 23, 2008.

Study Citation:	NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47.
OECD Harmonized Template:	logKow
HERO ID:	679849

EXTRACTION

Parameter	**Data**
log k_{ow}	approx. 9 -
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	No; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	NR
System	NR
pH	NR
Results Details Method	NR
Standard Deviation Results	NR
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID 675437.

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	logKow
HERO ID:	680097

EXTRACTION

Parameter	Data
log k_{ow}	9
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl Phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Continued on next page . . .

. . . continued from previous page

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	logKow
HERO ID:	680097

		EVALUATION	
Domain	Metric	Rating	Comments
Overall Quality Determination		**High**	

* Related References: Cited source: Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID: 675437

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	logKow
HERO ID:	5348358

EXTRACTION

Parameter	Data
log k_{ow}	9.37
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	RSC, (2019). ChemSpider: Diisononyl phthalate (DINP).
OECD Harmonized Template:	logKow
HERO ID:	7415500

EXTRACTION

Parameter	**Data**
log k_{ow}	9.214
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Not reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	Medium	Data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors; however it is not clear if this data is measured or calculated.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	N/A	This metric is not applicable to this calculated data.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	This metric is not applicable to this calculated data.

Overall Quality Determination Medium

* Related References: LabNetwork

Study Citation:	Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39.
OECD Harmonized Template:	Water Solubility
HERO ID:	675060

EXTRACTION

Parameter	Data
Water Solubility	3.08X10-4 mg/L
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cousins, I. T., Mackay, D., Parkerton, T. F.. Physical-chemical properties and evaluative fate modelling of phthalate esters. The Handbook of Environmental Chemistry, vol 3Q. 2003. 3:57-84.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Water Solubility
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Water Solubility	< 0.001 mg/L
CASRN and Test Material	28553-12-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	25°C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: referenced to HEROID: 675437 Staples CA, Peterson DR, Parkerton TF, Adams WJ. 1997. The environmental fate of phthalate esters: A literature review. Chemosphere 35(4):667-749.HEROID: 534354 Mackay D, Shiu WY, Ma KC, Lee SC. 2006. Handbook of physical-chemical properties and environmental fate for organic chemicals. 2nd edition. Volume III. Oxygen containing compounds. Boca Raton (FL): CRC Press, Taylor & Francis Group.

Study Citation:	EC/HC, (2015). State of the science report: Phthalate substance grouping 1,2-Benzenedicarboxylic acid, diisononyl ester; 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich (Diisononyl Phthalate; DINP). Chemical Abstracts Service Registry Numbers: 28553-12-0 and 68515-48-0.
OECD Harmonized Template:	Water Solubility
HERO ID:	3688004

EXTRACTION

Parameter	**Data**
Water Solubility	6.0X10-4 mg/L
CASRN and Test Material	68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR
Temperature	20°C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination — Medium

* Related References: referenced to: European Chemicals Agency. 2014. Registered Substances database. Search results for CAS RNs [28553-12-0 and 68515-48-0]. Helsinki (FI): ECHA.

Study Citation:	EC/HC, (2017). Draft screening assessment: Phthalate substance grouping.
OECD Harmonized Template:	Water Solubility
HERO ID:	5353181

EXTRACTION

Parameter	**Data**
Water Solubility	6.0E-4 mg/L
CASRN and Test Material	68515-48-0 and 28553-12-0; diisononyl phthalate
Confidentiality, Type, and Guideline	no; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	not specified
System	not specified
pH	not specified
Results Details Method	not specified
Standard Deviation Results	not specified
Results Details	not specified

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Source cited: ECHA c2007-2015b

Study Citation:	ECETOC, (1985). An assessment of the occurrence and effects of dialkyl ortho-phthalates in the environment.
OECD Harmonized Template:	Water Solubility
HERO ID:	679967

EXTRACTION

Parameter	**Data**
Water Solubility	0.2E3 ug/L
CASRN and Test Material	Not Reported; DINP
Confidentiality, Type, and Guideline	No; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	25 deg C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing CMA (1983). Measurement of the water-solubility of phthalate esters. Final report, Contract PE-11. 0-WS-SRL. Ll533-06, Syracuse Res. Corp., April, 1983. No HERO ID.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Water Solubility
HERO ID:	2441673

EXTRACTION

Parameter	Data
Water Solubility	0.0006 mg/L
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Reported as 0.6 μg/L

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Water Solubility
HERO ID:	7325002

EXTRACTION

Parameter	Data
Water Solubility	0.6 μg/L
CASRN and Test Material	68515-48-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; OECD TG 105
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	21 °C
System	Not Reported
pH	NR
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	EFSA, (2005). Opinion of the scientific panel on food additives, flavourings, processing aids and materials in contact with food (AFC) on a request from the commission related to di-isononylphthalate (DINP) for use in food contact materials. Question N° EFSA-q-2003-194. EFSA Journal 244(9):1-18.
OECD Harmonized Template:	Water Solubility
HERO ID:	3688079

EXTRACTION

Parameter	**Data**
Water Solubility	0.6 µg/L
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

Study Citation:	Howard, P. H., Banerjee, S., Robillard, K. H. (1985). Measurement of water solubilities octanol-water partition coefficients and vapor pressures of commercial phthalate esters. Environmental Toxicology and Chemistry 4(5):653-662.
OECD Harmonized Template:	Water Solubility
HERO ID:	679985

EXTRACTION

Parameter	Data
Water Solubility	0.2 mg/L
CASRN and Test Material	28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; If more than one manufacturer produced the individual PAE, the PAE product provided to us was an equal-proportion blend
Radiolabel, Source, State, and Purity	NR; Provided to Chemical Manufacturers' Association by U.S. manufacturers.; NR; Each sample contained less than 1 % of non-PAE material, as determined by another laboratory. Notes: mixture of 4 isomers at 26% C18, 8% C18, 28% C18, and 38% C18-19
Temperature	25°C
System	Protocol was designed to meet or exceed the requirements of the EPA-recommended procedure stated in U.S. Environmental Protection Agency. 1979. TSCA premanufacture testing of new chemical substances: Water solubility. Fed. Reg. 44: 16253-16259.
pH	Not reported
Results Details Method	HPLC
Standard Deviation Results	0.1
Results Details	ASTM Type 2 water

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) and other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	Standard test method used.
	Metric 4:	Reliability/Analytical Method	High	Protocol was designed to meet or exceed the requirements of the EPA-recommended procedure.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Continued on next page . . .

. . . continued from previous page

Study Citation:	Howard, P. H., Banerjee, S., Robillard, K. H. (1985). Measurement of water solubilities octanol-water partition coefficients and vapor pressures of commercial phthalate esters. Environmental Toxicology and Chemistry 4(5):653-662.
OECD Harmonized Template:	Water Solubility
HERO ID:	679985

EVALUATION

Domain	Metric	Rating	Comments

Study Citation:	Letinski, D. J., Jr, Connelly, M. J., Peterson, D. R., Parkerton, T. F. (2002). Slow-stir water solubility measurements of selected alcohols and diesters. Chemosphere 43(3):257-265.
OECD Harmonized Template:	Water Solubility
HERO ID:	5348351

EXTRACTION

Parameter	Data
Water Solubility	0.61 µg/L
CASRN and Test Material	28553-12-0; DINP
Confidentiality, Type, and Guideline	None; Experimental; Slow-stir water solubility method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Jayflex DINP from ExxonMobil Chemical Company; NR; NR
Temperature	22°C
System	glass aspirator bottles, a stir bar was placed in each bottle
pH	Not reported
Results Details Method	gas chromatograph equipped with mass selective detector
Standard Deviation Results	0.031
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173.
OECD Harmonized Template:	Water Solubility
HERO ID:	807140

EXTRACTION

Parameter	Data
Water Solubility	3.45X10-4 mg/L
CASRN and Test Material	28553-12-0; diisononyl phthalate
Confidentiality, Type, and Guideline	none; QSAR; Quantitative Structure-Property relationship model for estimation of water solubility
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	not applicable
System	QSPR model using the Lu index, which is based on the shortest distance matrix.
pH	not applicable
Results Details Method	Predictive model developed using Lu index: Log Sw = 8.2431 - 0.5718 (Lu)
Standard Deviation Results	Not Reported
Results Details	n = 34; correlation coefficient (R) = 0.9869; standard error (SE) = 0.44; leave-one-out cross validation correlation coefficient (Rsv) = 0.9709; corresponding standarderrors (scv) = 0.47

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	Uninformative	The QSPR model failed the standard error threshold of <0.3 and is therefore rated unacceptable.

Overall Quality Determination — Medium

Study Citation:	Lundberg, G., Nilsson, C. (1994). Phthalic acid esters used as plastic additives: Volume 1. Ecotoxicological risk assessment, Volume 2. Comparisons of toxicological effects. GRA and I(GRA and I):284.
OECD Harmonized Template:	Water Solubility
HERO ID:	680058

EXTRACTION

Parameter	Data
Water Solubility	0.18 mg/L
CASRN and Test Material	28553-12-0 and 68515-48-0; diisononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; liquid; NR Notes: DINP
Temperature	Not Reported
System	not reported
pH	not reported
Results Details Method	Not Reported
Standard Deviation Results	±0.10 mg/L
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Low

* Related References: Referenced SRC 1982 (in CMA 1983e)

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Water Solubility
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
Water Solubility	0.2 mg/L
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	20°C
System	Not Reported
pH	Not reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available database that provides references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Howard, P.H. et al. 1985. Environ Toxicol Chem 4: 653-61

Study Citation:	NTP-CERHR, (2000). NTP-CERHR expert panel report on di-isononyl phthalate. GRA and I(GRA and I):47.
OECD Harmonized Template:	Water Solubility
HERO ID:	679849

EXTRACTION

Parameter	**Data**
Water Solubility	< 0.001 - mg/L
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	No; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	NR
System	NR
pH	NR
Results Details Method	NR
Standard Deviation Results	NR
Results Details	Reported as insoluble.

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID 675437.

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	Water Solubility
HERO ID:	680097

EXTRACTION

Parameter	Data
Water Solubility	< 0.001 mg/L
CASRN and Test Material	68515-48-0 and 28553-12-0; Di-isononyl Phthalate
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features (e.g., presence of certain functional groups) or other physical/chemical properties (e.g., if the physical state is described as a liquid, the substance should have a melting point below 25°C and a boiling point above 25°C) or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Continued on next page . . .

. . . continued from previous page

Study Citation:	NTP-CERHR, (2003). NTP-CERHR monograph on the potential human reproductive and developmental effects of di-isononyl phthalate (DINP). Center for the Evaluation of Risks to Human ReproductionVol(2):i-III90.
OECD Harmonized Template:	Water Solubility
HERO ID:	680097

		EVALUATION	
Domain	Metric	Rating	Comments
Overall Quality Determination		**High**	

* Related References: Staples CA, Peterson DR, Parkerton TF, Adams WJ. The environmental fate of phthalate esters: A literature review. Chemosphere 35:667-749(1997). HERO ID: 675437

Study Citation:	SRC, (1983). Measurement of the water solubilities of phthalate esters (final report).
OECD Harmonized Template:	Water Solubility
HERO ID:	1316216

EXTRACTION

Parameter	Data
Water Solubility	0.2 - mg/L
CASRN and Test Material	Not Reported; diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; Measured test compound solubility in water by HPLC
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	25ºC
System	Samples shaken in distilled water, centrifuged and then analyzed
pH	Not Reported
Results Details Method	HPLC
Standard Deviation Results	±0.01
Results Details	The study reports that the experimental uncertainty exceeded that targeted in the SOP. Value reported based on curvilinear equation. Previously reported value = 0.24±0.05, value obtained by auditor = 0.24±0.05 (linear equation).

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Low	The study authors state that the experimental uncertainty exceeded that targeted in the SOP.
	Metric 4:	Reliability/Analytical Method	Low	Value was at the detection limit of the instrumentation. Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination — Medium

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Flash Point
HERO ID:	2441673

EXTRACTION

Parameter	Data
Flash Point	> 200 - C
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Flash Point
HERO ID:	7325002

EXTRACTION

Parameter	**Data**
Flash Point	236 - °C
CASRN and Test Material	28533-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; experimental; ASTM D 93/EU Method A.9
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination **High**

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Flash Point
HERO ID:	6629861

EXTRACTION

Parameter	**Data**
Flash Point	221 c
CASRN and Test Material	28553-12-0; 0
Confidentiality, Type, and Guideline	None; Experimental; Closed cup
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: ILO International Chemical Safety Cards (ICSC) and Fire Protection Guide to Hazardous Materials. 13 ed. Quincy, MA: National Fire Protection Association, 2002., p. 325-99

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Flash Point
HERO ID:	5348358

EXTRACTION

Parameter	**Data**
Flash Point	213 C
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Closed cup
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
System	Not Reported
Standard Deviation Results	Not reported
Results Details	213°C (415°F)

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Autoflammability
HERO ID:	2441673

EXTRACTION

Parameter	Data
Auto-flammability	ca 380 C
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Value	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Autoflammability
HERO ID:	7325002

EXTRACTION

Parameter	Data
Auto-flammability	400 °C
CASRN and Test Material	68515-48-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; ASTM E 659
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	at 1313 hPa
Results Value	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Autoflammability
HERO ID:	6629861

EXTRACTION

Parameter	Data
Auto-flammability	380 C
CASRN and Test Material	28553-12-0; DINP
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not reported
Standard Deviation Results	Not reported
Results Details	Not Reported
Results Value	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: ILO International Chemical Safety Cards (ICSC)

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Viscosity
HERO ID:	2441673

EXTRACTION

Parameter	**Data**
Viscosity	77.6
CASRN and Test Material	28553-12-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	value also reported: 27.7 mm2/s at 40°C

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Viscosity
HERO ID:	2441673

EXTRACTION

Parameter	**Data**
Viscosity	93
CASRN and Test Material	68515-12-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	ECHA, (2016). Committee for Risk Assessment RAC - Annex 1 - Background document to the Opinion proposing harmonised classification and labelling at EU level of 1,2-Benzenedicarboxylic acid, di-C8-10-branched alkylesters, C9- rich; [1] di-"isononyl" phthalate; [2] [DINP] EC Number: 271-090-9 [1] 249-079-5 [2] CAS Number: 68515-48-0 [1] 28553-12-0 [2].
OECD Harmonized Template:	Viscosity
HERO ID:	7325002

EXTRACTION

Parameter	Data
Viscosity	77.6
CASRN and Test Material	28533-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	No; experimental; OECD TG 114
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	20 °C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	77.6 mm²/s at 20 °C and 27.7 mm²/s at 40 °C

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Referenced to the REACH registration (no HERO ID).

Study Citation:	HSDB, (2015). Diisononyl phthalate (CASRN: 28553-12-0).
OECD Harmonized Template:	Viscosity
HERO ID:	2356022

EXTRACTION

Parameter	**Data**
Viscosity	6 - 500
CASRN and Test Material	28553-12-0 and 68515-48-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	no; not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	0 to-100 °C
Test Conditions	500 cST at 0 °C; 102 cST at 20 °C; 37 cSt at 37.8 °C; 6 cSt at 100 °C
Standard Deviation Results	NR
Results Details	NR

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing O'Neil, M.J. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry, 2013., p. 598. HERO ID 5348358.

Study Citation:	Lorenzi, De, L., Fermeglia, M., Torriano, G. (1998). Density, kinematic viscosity, and refractive index for bis(2-ethylhexyl) adipate, tris(2-ethylhexyl) trimellitate, and diisononyl phthalate. Journal of Chemical and Engineering Data 43(2):183-186.
OECD Harmonized Template:	Viscosity
HERO ID:	1325695

EXTRACTION

Parameter	Data
Viscosity	55.334
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Aldrich; NR; 99+% mixture of C9 isomers, 0.15% maximum impurity (dioctyl phthalate) Notes: No further purification.
Temperature	298.15 K
Test Conditions	Viscosity measurements taken with an Ubbelohde suspended-level capillary viscometer coupled with a Schott electronic timer (AVS 300). The precision was ±0.01 s. Temperature was regulated between ±0.02 K and measured with an accuracy of ±0.01 K.
Standard Deviation Results	Not Reported
Results Details	Value reported as 55.334 mPa.s. Experimental viscosity data (mPa.s): 101.95 at 291.29 K, 55.334 at 298.15 K, 32.812 at 308.17 K, 21.035 at 319.06 K, 13.812 at 327.98 K, 9.9061 at 337.87 K, 7.3961 at 348.72 K, 5.7089 at 358.64 K, and 4.5214 at 368.49 K.

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	NCBI, (2020). PubChem database: compound summary: diisononyl phthalate.
OECD Harmonized Template:	Viscosity
HERO ID:	6629861

EXTRACTION

Parameter	**Data**
Viscosity	77.6
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Aldrich; NR; 99% mixture of C9 isomers, 0.15% maximum impurity (dioctyl phthalate) Notes: No further purification.
Temperature	20°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a recognized data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: ILO International Chemical Safety Cards (ICSC)

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Viscosity
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
Viscosity	102
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	20°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	102 cST; kinematic viscosity

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a recognized data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 598

Study Citation:	Liu, L., Shen, L., Yang, F., Han, F., Hu, P., Song, M. (2016). Determining Phthalic Acid Esters Using Terahertz Time Domain Spectroscopy. Journal of Applied Spectroscopy 83(4):603-609.
OECD Harmonized Template:	Refractive Index
HERO ID:	3540862

EXTRACTION

Parameter	**Data**
Refractive Index	1.524
CASRN and Test Material	28553-12-0; Di-isononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	99.99% pure alcohol; NR; Room temperature; NR
Radiolabel, Source, State, and Purity	NR; Dr. Ehrenstorfer GmbH; Liquid; 99.0%
Temperature	24°C
System	A split Ti:sapphire mode-lock laser pulse was used to trigger THz pulses that were collected and collimated using a pair of gold coated off-axis parabolic mirrors and transmitted through the sample to be investigated.
Standard Deviation Results	Not reported
Results Details	The reference signal is a THz pulse transmitted through the empty crystal cell with a correction applied to account for the effect of the crystal cell absorbing THz waves. The experimental result is entered into a mathematical equation to calculate the refractive index.
Results Details Methods	Not Reported
Parameter	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data was measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	Methodology clearly stated.
	Metric 4:	Reliability/Analytical Method	High	Experimental procedures and analytical methods were clearly delineated.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	Lorenzi, De, L., Fermeglia, M., Torriano, G. (1998). Density, kinematic viscosity, and refractive index for bis(2-ethylhexyl) adipate, tris(2-ethylhexyl) trimellitate, and diisononyl phthalate. Journal of Chemical and Engineering Data 43(2):183-186.
OECD Harmonized Template:	Refractive Index
HERO ID:	1325695

EXTRACTION

Parameter	Data
Refractive Index	1.48610
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Aldrich; NR; 99+% mixture of C9 isomers, 0.15% maximum impurity (dioctyl phthalate) Notes: No further purification.
Temperature	293.15 K
System	Abbe ATAGO type 3 refractometer was used to measure the refractive index of the sodium-D line between 288.15 and 323.15 K. Temperature was regulated in a constant-temperature bath ± 0.01 K.
Standard Deviation Results	Not Reported
Results Details	Value interpolated at 293.15 K. Experimental refractive index data: 1.4883 at 288.15 K, 1.4860 at 294.35 K, 1.4846 at 298.15 K, 1.4828 at 302.75 K, 1.4809 at 307.95 K, 1.4788 at 313.35 K, 1.4769 at 318.15 K, and 1.4753 at 322.25 K.
Results Details Methods	Not Reported
Parameter	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	NLM, (2015). PubChem: Hazardous Substance Data Bank: Di-isononyl phthalate, 28553-12-0.
OECD Harmonized Template:	Refractive Index
HERO ID:	5926163

EXTRACTION

Parameter	**Data**
Refractive Index	1.486
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported
Parameter	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available, peer-reviewed database that provides references to a recognized data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.) 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. P. 598

Study Citation:	O'Neil, M. J. (2013). Diisononyl phthalate. :517.
OECD Harmonized Template:	Refractive Index
HERO ID:	5348358

EXTRACTION

Parameter	Data
Refractive Index	1.486
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; Liquid; NR
Temperature	20°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported
Parameter	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a recognized, peer-reviewed data collection.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: O'Neil, M.J. (Ed.). 2013. The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry. p. 598-599.

Study Citation:	Cousins, A. P., Remberger, M., Kaj, L., Ekheden, Y., Dusan, B., Brorstroem-Lunden, E. (2007). Results from the Swedish National Screening Programme 2006. Subreport 1: Phthalates. GRA and I(GRA and I):39.
OECD Harmonized Template:	Henry's Law
HERO ID:	675060

EXTRACTION

Parameter	**Data**
Henry's Law	9.26 Pa x m^3/mol
CASRN and Test Material	28553-12-0 and 68515-48-0; di-isononyl phthalate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Temperature	Not Reported
pH	Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cousins, I. T., Mackay, D., Parkerton, T. F.. Physical-chemical properties and evaluative fate modelling of phthalate esters. The Handbook of Environmental Chemistry, vol 3Q. 2003. 3:57-84.

Study Citation:	Cousins, I., Mackay, D. (2000). Correlating the physical–chemical properties of phthalate esters using the 'three solubility' approach. Chemosphere 41(9):1389-1399.
OECD Harmonized Template:	Henry's Law
HERO ID:	4159647

EXTRACTION

Parameter	**Data**
Henry's Law	9.26 Pa m3/mol
CASRN and Test Material	28553-12-0; Diisononyl phthalate
Confidentiality, Type, and Guideline	None; QSAR; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	25°C
pH	Not reported
System	Three solubility approach: a quantitative structure-property relationship; correlations between apparent-solubilities of liquid state compounds in air and water, and molecular structures used to estimate partition coefficient Kaw (air-water)
Standard Deviation Results	Not reported
Results Details	log Kaw = -2.43
Results Details Methods	Not applicable

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	High	The model had a defined, unambiguous endpoint AND the model performance was known and r2 $>$ 0.7, q2 $>$ 0.5, and SE $<$ 0.3.

Overall Quality Determination High

Study Citation:	ECHA, (2013). Evaluation of new scientific evidence concerning DINP and DIDP in relation to entry 52 of Annex XVII to REACH Regulation (EC) No 1907/2006.
OECD Harmonized Template:	Henry's Law
HERO ID:	2441673

EXTRACTION

Parameter	Data
Henry's Law	41.4 Pa.m3/mol
CASRN and Test Material	28553-12-0 and 68515-48-0; DINP
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
pH	Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: EC (2003a). Risk Assessment Report for DINP. Final report, European Commission, EUR 20784EN, European Union Risk Assessment Report, Volume 35, Luxembourg: Office for Official Publications of the European Communities.

Study Citation:	Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173.
OECD Harmonized Template:	Henry's Law
HERO ID:	807140

EXTRACTION

Parameter	Data
Henry's Law	Not Reported
CASRN and Test Material	28553-12-0; diisononyl phthalate
Confidentiality, Type, and Guideline	none; QSAR; Quantitative Structure-Property relationship model for estimation of log Kaw
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Temperature	Not Reported
pH	Not Reported
System	Kaw = S(A)/Sw where S(A) is the solubility in air and Sw is the solubility in water
Standard Deviation Results	Not Reported
Results Details	Log Kaw= -2.20
Results Details Methods	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	Medium	Modeled data compared well to other data.

Overall Quality Determination Medium

Study Citation:	Lu, C. (2009). Prediction of environmental properties in water-soil-air systems for phthalates. Bulletin of Environmental Contamination and Toxicology 83(2):168-173.
OECD Harmonized Template:	Other Properties
HERO ID:	807140

EXTRACTION

Parameter	**Data**
CASRN and Test Material	28553-12-0; diisononyl phthalate
Confidentiality, Type, and Guideline	none; QSAR; Quantitative Structure-Property relationship model for estimation of log Koa
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: DINP
Results Value	Log Koa = 10.72
Results Details	Koa = So/S(A) where So is solubility in octanol and S(A) is the solubility in air
Results Remarks	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	Medium	Modeled data compared well to other data.

Overall Quality Determination Medium

List of Abbreviations and Acronyms for Data Quality Evaluation and Extraction Tables

Term	Definition
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
atm	Atmospheres
atm · m^3/mol	Atmospheres - cubic meters per mole
C	Celsius
CASRN	Chemical Abstract Service registry number
cP	Centipoise
CRC	CRC Handbook of Chemistry and Physics
DOE	U.S. Department of Energy
ECB	European Chemicals Bureau
EPA	Environmental Protection Agency
F	Fahrenheit
GC	Gas Chromatography
g/cm^3	Grams per cubic centimeter
GLP	Good Laboratory Practice
HLC	Henry's Law Constant
HPV	High Production Volume
HSDB	Hazard Substance Data Bank
ILO	International Labour Organization
IPCS	International Programme on Chemical Safety
IUCLID	International Uniform Chemical Information Database
K	Kelvin
Koa	Octanol-Air partition coefficient
Kow	Octanol-Water partition coefficient
mg/L	Milligrams per Liter
mol	Mole
mmHg	Millimeters of Mercury
MS	Mass Spectrometry
N/A	Not Applicable
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NLM	National Library of Medicine
NR	Not Reported
OECD	Organisation for Economic Co-operation and Development
Pa (hPa)	Pascals (hectopascals; 1 hPa = 100 Pa)
pH	Negative base 10 Log of Hydrogen Ion (H+) Concentration in Aqueous Solution
pKa	Negative base 10 Log of Acid Dissociation Constant (Ka)
RIVM	National Institute for Public Health and the Environment (Dutch: Rijksinstituut voor Volksgezondheid en Milieu)

Continued on next page ...

...continued from previous page

Term	Definition
RSC	Royal Society of Chemistry
RT	Retention Time
SIDs	Screening Information Dataset
VP	Vapor Pressure
US or USA	United States of America
UV (UV-Vis)	Ultra Violet (UV-Visible)
WHO	World Health Organization