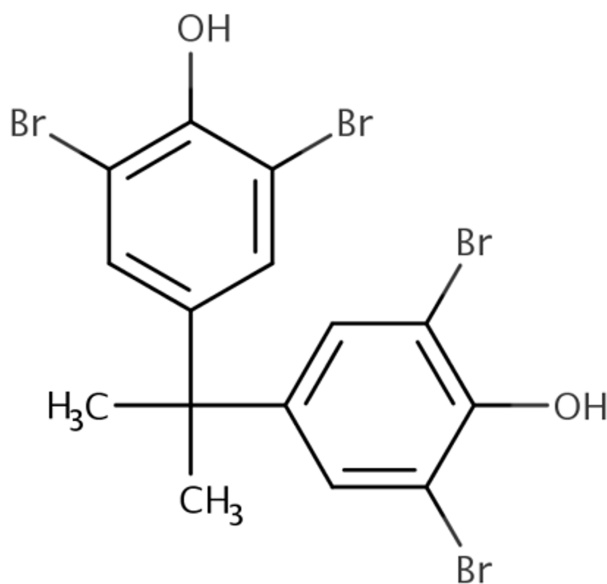

**Draft Data Quality Evaluation and Data Extraction Information for
Physical and Chemical Properties for
4,4-(1-Methylethylidene)bis[2,6-dibromophenol] (TBBPA)**

Systematic Review Support Document for the Draft Risk Evaluation

CASRN: 79-94-7



May 2026

This supplemental file contains information regarding the data extraction and evaluation results for data sources that were considered for the *Draft Risk Evaluation for 4,4'-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA)* 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 *Draft Systematic Review Protocol for 4,4'-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA)*. 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.

TBBPA

Table of Contents

HERO ID	Reference	Page
Physical Form or State		
10290671	Agroscience,, E.E., LLC, (2022). Determination of water solubility.	8
4824921	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..	9
5238261	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).	10
6670287	Esch, Van, G. J. (1995). Tetrabromobisphenol A and derivatives / first draft prepared by G. J. van Esch.	11
5160043	IARC, (2018). Some Industrial Chemicals.	12
5160132	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).	13
5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	14
6301254	NIEHS, (2002). Tetrabromobisphenol A [79-94-7]: Review of toxicological literature.	15
4296130	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.	16
6305896	U.S. EPA, (2019). Proposed designation of 4,4'-(1-methylethylidene)bis [2,6-dibromophenol] (CASRN 79-94-7) as a high-priority substance for risk evaluation.	17
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	18
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	19
5926425	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..	20
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	23
Melting Point		
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	24
5238261	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).	25
5926425	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..	26
1927615	Fu, J., Suuberg, E. M. (2012). Vapor pressure of three brominated flame retardants determined by using the Knudsen effusion method. Environmental Toxicology and Chemistry 31(3):574-578.	27
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	28
5160043	IARC, (2018). Some Industrial Chemicals.	29
5496178	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.	30
5160132	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).	31

TBBPA

Table of Contents

5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	32
10225166	NIST, (2022). NIST Chemistry WebBook. Phenol, 4,4'-(1-methylethylidene)bis[2,6-dibromo- (79-94-7). Standard Reference Database No. 69.	33
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	34
4296199	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.	35
5926266	RSC, (2019). ChemSpider: Tetrabromobisphenol A.	36
5926152	U.S. EPA, (2019). Chemistry Dashboard Information for 3,3',5,5'-Tetrabromobisphenol A. 79-94-7.	39
6305896	U.S. EPA, (2019). Proposed designation of 4,4'-(1-methylethylidene)bis [2,6-dibromophenol] (CASRN 79-94-7) as a high-priority substance for risk evaluation.	43
Boiling Point		
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	44
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	45
5160043	IARC, (2018). Some Industrial Chemicals.	46
5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	47
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	48
4296199	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.	49
7500050	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.	50
Density		
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	51
5238261	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).	52
5160043	IARC, (2018). Some Industrial Chemicals.	53
5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	54
4296199	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.	55
5926425	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..	56
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	57
5926266	RSC, (2019). ChemSpider: Tetrabromobisphenol A.	58
Particle Size		
12976567	Inveresk Research International, (2002). Tetrabromobisphenol A determination of the particle size of tetrabromobisphenol A (TBBPA) by low angle laser light scattering (LALLS) using the Malvern Mastersizer X.	59

TBBPA

Table of Contents

12974710	Technology., Chilworth (2006). [Redacted title] - (Batch No. C842175) - Group A/B Classification Test.	61
Vapor Pressure		
4296230	CECBP, (2008). Brominated and chlorinated organic chemical compounds used as flame retardants: Materials for the December 4-5, 2008 meeting of the California Environmental Contaminant Biomonitoring Program (CECBP): Scientific Guidance Panel (SGP): Agenda item: Consideration of potential designated chemicals.	62
4824921	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..	63
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	66
8775306	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.	67
1927615	Fu, J., Suuberg, E. M. (2012). Vapor pressure of three brominated flame retardants determined by using the Knudsen effusion method. Environmental Toxicology and Chemistry 31(3):574-578.	68
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	69
5160043	IARC, (2018). Some Industrial Chemicals.	70
5496178	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.	71
5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	72
4296199	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.	73
4296130	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.	74
7500050	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.	75
6391024	Wildlife International Ltd, (2001). Determination of the vapor pressure of tetrabromobisphenol A using the spinning rotor gauge method.	77
logKow		
4296230	CECBP, (2008). Brominated and chlorinated organic chemical compounds used as flame retardants: Materials for the December 4-5, 2008 meeting of the California Environmental Contaminant Biomonitoring Program (CECBP): Scientific Guidance Panel (SGP): Agenda item: Consideration of potential designated chemicals.	78
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	79
5238261	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).	80
8775306	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.	83
5926425	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..	84
6670287	Esch, Van, G. J. (1995). Tetrabromobisphenol A and derivatives / first draft prepared by G. J. van Esch.	85
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	86
5160043	IARC, (2018). Some Industrial Chemicals.	87
5496178	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.	88

TBBPA

Table of Contents

5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	89
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	90
5926266	RSC, (2019). ChemSpider: Tetrabromobisphenol A.	91
4296130	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.	93
7500050	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.	94
2779941	Velsicol Chem Corp, (1978). Partition coefficient of several flame retardants and industrial chemicals.	95
1443955	Wildlife International Ltd, (2001). Determination of the n-octanol/water partition coefficient of tetrabromobisphenol A.	96
Water Solubility		
10290671	Agroscience,, E.E., LLC, (2022). Determination of water solubility.	97
4824921	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..	98
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	103
5238261	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).	105
8775306	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.	108
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	109
5160043	IARC, (2018). Some Industrial Chemicals.	110
5496178	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.	112
5155561	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).	113
1443968	NOTOX, (2000). Determination of the water solubility of tetrabromobisphenol A.	114
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	115
4296199	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.	118
4296130	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.	119
7500050	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.	120
2779941	Velsicol Chem Corp, (1978). Partition coefficient of several flame retardants and industrial chemicals.	122
5546500	Velsicol Chem Corp, (1978). Water solubility of several flame retardants and industrial chemicals.	123
5547550	Velsicol Chem Corp, (1990). Water solubility of several flame retardants and industrial chemicals with test data and cover letter.	124
12976571	Wildlife International Ltd, (2008). Determination of water solubility of tetrabromobisphenol A.	125
1443956	Wildlife International Ltd, (2002). Determination of water solubility of tetrabromobisphenol A.	126

Flash Point

TBBPA

Table of Contents

4296199	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.	127
Autoflammability		
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	128
pKa		
1443911	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.	129
5238261	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).	131
1443931	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.	132
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	134
6305896	U.S. EPA, (2019). Proposed designation of 4,4'-(1-methylethylidene)bis [2,6-dibromophenol] (CASRN 79-94-7) as a high-priority substance for risk evaluation.	135
7500050	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.	136
1443953	Wildlife International Ltd, (2002). Determination of the dissociation constant of tetrabromobisphenol A.	138
Viscosity		
Refractive Index		
Henry's Law		
4824921	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..	139
8775306	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.	140
5496178	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.	141
5160132	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).	142
Nanomaterial Zeta		
Dielectric Constant		
UV and Visible Absorption		
5348102	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.	144
Other Properties		
8775306	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.	145
Miscellaneous		
List of Abbreviations and Acronyms for Data Quality Evaluation and Extraction Tables		147

Study Citation:	Agroscience,, E.E., LLC, (2022). Determination of water solubility.
OECD Harmonized Template:	Physical Form or State
HERO ID:	10290671

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	None; Experimental; None
Solvent, Reactivity, Storage, and Stability	NA; NA; ambient in darkness; NA
Radiolabel, Source, State, and Purity	NA; Alfa Aesar; White powder; 99.5% (HPLC) Notes: NA
Results Value	White powder
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)	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	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
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Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..
OECD Harmonized Template:	Physical Form or State
HERO ID:	4824921

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; Not Reported
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; white crystalline powder; Not Reported Notes: (EURAR, 2006)
Results Value	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	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: Cited from EURAR (European Union Risk Assessment Report), 2006. 2,2',6,6'-Tetrabromo-4,4'-Isopropylidene Diphenol (Tetrabromobisphenol-A or TBBP-A). Part II – Human Health. FullRisk Assessment Report. European Chemicals Agency. United Kingdom. (HERO ID: 5238258)

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).
OECD Harmonized Template:	Physical Form or State
HERO ID:	5238261

EXTRACTION

Parameter	Data
CASRN and Test Material	79-97-4; TBBPA
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: NR
Results Value	white crystalline powder
Results Details	at 20°C and 101,325 Pa

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	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: WHO, 1995

Study Citation:	Esch, Van, G. J. (1995). Tetrabromobisphenol A and derivatives / first draft prepared by G. J. van Esch.
OECD Harmonized Template:	Physical Form or State
HERO ID:	6670287

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; TBBPA
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; white (colorless), crystalline or powdered solid with a slight characteristic odor containing 58.7% bromine; Not Reported
Results Value	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)	High	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 non-standard but is expected to be appropriate OR 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 from Ethyl Corporation (1992b) Saytex RB-100. Baton Rouge, Louisiana, Ethyl Corporation (Report submitted to WHO by the Brominated Flame Retardant Industry Panel).

Study Citation:	IARC, (2018). Some Industrial Chemicals.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5160043

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; Not Reported
Confidentiality, Type, and Guideline	No; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; White crystalline powder at 20 deg. C containing 58.4% bromine; Not Reported
Results Value	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 non-standard but is expected to be appropriate OR 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: Data reference to both NTP (2014), HERO ID 5160132 and ECHA (2006), HERO ID 1443911.

Study Citation:	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).
OECD Harmonized Template:	Physical Form or State
HERO ID:	5160132

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; Not Reported
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; off-white powder; Not Reported
Results Value	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 non-standard but is expected to be appropriate OR 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 from Ashford, R.D. (1994). Ashford's Dictionary of Industrial Chemicals, p. 868. Wavelength Publications Ltd., London, England.

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).
OECD Harmonized Template:	Physical Form or State
HERO ID:	5155561

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; Not Reported
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; white crystalline powder with slight odor; Not Reported
Results Value	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	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**

Study Citation:	NIEHS, (2002). Tetrabromobisphenol A [79-94-7]: Review of toxicological literature.
OECD Harmonized Template:	Physical Form or State
HERO ID:	6301254

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	no; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; white (colorless) crystalline powder; Not Reported
Results Value	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 non-standard but is expected to be appropriate OR 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 from IPCS/WHO (International Programme on Chemical Safety/World Health Organization). 1995.Environmental Health Criteria 172: Tetrabromobisphenol A and Derivatives. World HealthOrganization, Geneva, Switzerland, 72 pp. Internet address:<http://www.inchem.org/documents/ehc/ehc/ehc172.htm>. Last accessed on January 29, 2002. (HERO ID: 5348017)

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.
OECD Harmonized Template:	Physical Form or State
HERO ID:	4296130

EXTRACTION	
Parameter	Data
CASRN and Test Material	NR; TBBPA
Confidentiality, Type, and Guideline	No; not specified; 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
Results Value	Solid
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	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	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
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Study Citation:	U.S. EPA, (2019). Proposed designation of 4,4'-(1-methylethylidene)bis [2,6-dibromophenol] (CASRN 79-94-7) as a high-priority substance for risk evaluation.
OECD Harmonized Template:	Physical Form or State
HERO ID:	6305896

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; Not Reported
Confidentiality, Type, and Guideline	Not Reported; Not Reported; 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	Solid
Results Details	White crystalline

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	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.
	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: NLM HERO ID 5926120

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Physical Form or State
HERO ID:	1443931

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Value	crystals from isopropyl alcohol
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 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: O'Neil, M.J. (Ed.) The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biological. Cambridge, UK: Royal Society of Chemistry, 2013. p. 1703

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5348102

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Value	solid crystals
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:	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926425

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Details	white

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 peer-reviewed database that contains 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: Value reported by multiple primary sources in REAXYS.

Study Citation:	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926425

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Details	off-white

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 peer-reviewed database that contains 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: Value reported by multiple primary sources in REAXYS.

Study Citation:	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926425

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Details	yellow to light-yellow

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 peer-reviewed database that contains 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
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* Related References: Patent; Tosoh Corporation; US6383127; (2002); (B2) English

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Physical Form or State
HERO ID:	1443931

EXTRACTION

Parameter	Data
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Details	odorless

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: ECHA. 2018, HERO ID 5230716. Search for chemicals. 2,2',6,6'-Tetrabromobisphenol A (79-94-7) Registered Substances Dossier. European Chemical Agency.

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.
OECD Harmonized Template:	Melting Point
HERO ID:	1443911

EXTRACTION

Parameter	Data
Melting Point	178 - 182 °C
CASRN and Test Material	79-94-7; tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; experimental; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; solid; 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	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	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:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).
OECD Harmonized Template:	Melting Point
HERO ID:	5238261

EXTRACTION	
Parameter	Data
Melting Point	= 178 - <= 182 °C
CASRN and Test Material	79-94-7; TBBBPA
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 Notes: NR
Results Details Methods	Not reported
Standard Deviation Results	Not reported
Results Details	Melting point 178°C; 181-182°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	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	Medium	The data are from a source that is known but is missing elements required for High designation: 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

High

* Related References: One source cite is IUCLID (2000)

Study Citation:	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..
OECD Harmonized Template:	Melting Point
HERO ID:	5926425

EXTRACTION

Parameter	Data
Melting Point	178 - 182 °C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Results Details Methods	Measured conditions were not reported; 19 values were reported in Reaxys; 17 of these values were reported in the range of 178 to 182°C; 2 data points were outside the range.
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 secondary database with a references to the peer-reviewed original source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination**High**

* Related References: Data range determined from multiple primary sources in REAXYS.

Study Citation:	Fu, J., Suuberg, E. M. (2012). Vapor pressure of three brominated flame retardants determined by using the Knudsen effusion method. Environmental Toxicology and Chemistry 31(3):574-578.
OECD Harmonized Template:	Melting Point
HERO ID:	1927615

EXTRACTION

Parameter	Data
Melting Point	454.9 - 456.4 K
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 102: Melting point/melting range
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	Not Reported; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	capillary melt, appears to be equivalent to OECD 102

EVALUATION

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured or estimated for the subject chemical substance; mass fraction purity >0.98.
	Metric 2: Appropriateness	High	The melting temperatures of TBBPA are generally in good agreement with values summarized in the SciFinder compound database (https://scifinder.cas.org/scifinder/view/SciFinder/scifinderExplore.jsf).
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	Medium	The capillary method used appears to be in agreement with OECD 102.
	Metric 4: Reliability/Analytical Method	Medium	The capillary method used appears to be in agreement with OECD 102.
Domain 3: Other	Metric 5: Databases	High	Data is from a peer-reviewed primary source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination**High**

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Melting Point
HERO ID:	1443931

EXTRACTION

Parameter	Data
Melting Point	179 °C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; 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'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: Haynes, W.M. (Ed.) 2014. CRC Handbook of Chemistry and Physics. 95th Edition. CRC Press LLC, Boca Raton: FL 2014-2015. p. 3-58. HERO ID 5231198

Study Citation:	IARC, (2018). Some Industrial Chemicals.
OECD Harmonized Template:	Melting Point
HERO ID:	5160043

EXTRACTION

Parameter	Data
Melting Point	181 - 182 °C
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
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 non-standard but is expected to be appropriate OR 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: Data reference to both NTP (2014), HERO ID 5160132 and ECHA (2006), HERO ID 1443911.

Study Citation:	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.
OECD Harmonized Template:	Melting Point
HERO ID:	5496178

EXTRACTION	
Parameter	Data
Melting Point	451.5
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; Experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	No; Sigma-Aldrich (Milwaukee, WI); Solid; 97%
Results Details Methods	Not Reported
Standard Deviation Results	451.5±0.5
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 and 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 out outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on inclusion of peer-reviewed data from another source.
Domain 3: Other	Metric 5:	Databases	High	Data is from a peer-reviewed primary source.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination

High

Study Citation:	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).
OECD Harmonized Template:	Melting Point
HERO ID:	5160132

EXTRACTION	
Parameter	Data
Melting Point	179 - 181 °C
CASRN and Test Material	79-94-7; TBBPA
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 non-standard but is expected to be appropriate OR 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 from Ashford, R.D. (1994). Ashford's Dictionary of Industrial Chemicals, p. 868. Wavelength Publications Ltd., London, England.

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).			
OECD Harmonized Template:	Melting Point			
HERO ID:	5155561			
EXTRACTION				
Parameter	Data			
Melting Point	181 - 182 °C			
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A			
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.
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: No reference citedData already entered under HERO ID 5160043

Study Citation:	NIST, (2022). NIST Chemistry WebBook. Phenol, 4,4'-(1-methylethylidene)bis[2,6-dibromo- (79-94-7). Standard Reference Database No. 69.
OECD Harmonized Template:	Melting Point
HERO ID:	10225166

EXTRACTION

Parameter	Data
Melting Point	Not Reported
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
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	enthalpy of fusion: 29.1 kJ.mol at 451.5 KMethod: Differential scanning calorimetry

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 non-standard but is expected to be appropriate OR 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 from Kuramochi, Hidetoshi; Kawamoto, Katsuya; Miyazaki, Kohei; Nagahama, Kunio; Maeda, Kouji; Li, Xian-Wei; Shibata, Etsuro; Nakamura, Takashi; Sakai, Shin-Ichi, DETERMINATION OF PHYSICOCHEMICAL PROPERTIES OF TETRABROMOBISPHENOL A, Environ Toxicol Chem, 2008, 27, 12, 2413, <https://doi.org/10.1897/07-472.1> .

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	Melting Point
HERO ID:	5348102

EXTRACTION

Parameter	Data
Melting Point	181 - 182 °C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; 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'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**

Study Citation:	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.
OECD Harmonized Template:	Melting Point
HERO ID:	4296199

EXTRACTION	
Parameter	Data
Melting Point	178 - 180 °C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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	Also, (180-184°C) 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 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 Kopp, A. (1990) Unterlagen über bromhaltige Flammschutzmittel. Document sent from Der Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit, Bonn, Federal Republic of Germany, to the European Economic Community, Brussels. Dated 14 March. No HERO ID.

Study Citation:	RSC, (2019). ChemSpider: Tetrabromobisphenol A.
OECD Harmonized Template:	Melting Point
HERO ID:	5926266

EXTRACTION	
Parameter	Data
Melting Point	180 °C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; 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'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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination

Medium

* Related References: TCI

Study Citation:	RSC, (2019). ChemSpider: Tetrabromobisphenol A.			
OECD Harmonized Template:	Melting Point			
HERO ID:	5926266			
EXTRACTION				
Parameter	Data			
Melting Point	179 - 182 °C			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; 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’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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

* Related References: Alfa Aesar

Study Citation:	RSC, (2019). ChemSpider: Tetrabromobisphenol A.			
OECD Harmonized Template:	Melting Point			
HERO ID:	5926266			
EXTRACTION				
Parameter	Data			
Melting Point	181 - 183 °C			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; 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’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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

* Related References: LabNetwork

Study Citation:	U.S. EPA, (2019). Chemistry Dashboard Information for 3,3',5,5'-Tetrabromobisphenol A. 79-94-7.
OECD Harmonized Template:	Melting Point
HERO ID:	5926152

EXTRACTION

Parameter	Data
Melting Point	181 °C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; 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'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 the original, 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: PhysProp

Study Citation:	U.S. EPA, (2019). Chemistry Dashboard Information for 3,3',5,5'-Tetrabromobisphenol A. 79-94-7.			
OECD Harmonized Template:	Melting Point			
HERO ID:	5926152			
EXTRACTION				
Parameter	Data			
Melting Point	181 °C			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; 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'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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

* Related References: Jean-Claude Bradley Open Melting Point Dataset

Study Citation:	U.S. EPA, (2019). Chemistry Dashboard Information for 3,3’ ,5,5’ -Tetrabromobisphenol A. 79-94-7.			
OECD Harmonized Template:	Melting Point			
HERO ID:	5926152			
EXTRACTION				
Parameter	Data			
Melting Point	180 °C			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; 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’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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

* Related References: TCI

Study Citation:	U.S. EPA, (2019). Chemistry Dashboard Information for 3,3',5,5'-Tetrabromobisphenol A. 79-94-7.			
OECD Harmonized Template:	Melting Point			
HERO ID:	5926152			
EXTRACTION				
Parameter	Data			
Melting Point	181 °C			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; 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'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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

* Related References: Alfa Aesar

Study Citation:	U.S. EPA, (2019). Proposed designation of 4,4'-(1-methylethylidene)bis [2,6-dibromophenol] (CASRN 79-94-7) as a high-priority substance for risk evaluation.
OECD Harmonized Template:	Melting Point
HERO ID:	6305896

EXTRACTION

Parameter	Data
Melting Point	= 181 °C
CASRN and Test Material	79-94-7; TBBPA
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 Notes: NR
Results Details Methods	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.
	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: NLM HERO ID 5926120

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.
OECD Harmonized Template:	Boiling Point
HERO ID:	1443911

EXTRACTION	
Parameter	Data
Boiling Point	~ 316 C
CASRN and Test Material	79-94-7; tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; experimental; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; solid; NR
Standard Deviation Results	Not Reported
Results Details	decomposes over the temperature range of 200-300°C, therefore, the boiling point cannot be verified

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	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	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:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Boiling Point
HERO ID:	1443931

EXTRACTION

Parameter	Data
Boiling Point	316 C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Standard Deviation Results	Not Reported
Results Details	decomposes at 200-300 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	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: EU; European Union Risk Assessment Report 2,2',6,6'-Tetrabromo-4,4'-isopropylidenediphenol (CAS No. 79-94-7), Part II - Human Health, Final Report 2006. HERO ID 1443911

Study Citation:	IARC, (2018). Some Industrial Chemicals.
OECD Harmonized Template:	Boiling Point
HERO ID:	5160043

EXTRACTION

Parameter	Data
Boiling Point	316 - C
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
Confidentiality, Type, and Guideline	Not Reported; Not Reported; 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	Reported as approximate (~316) and mentions that decomposition occurs at 200-300 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	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 non-standard but is expected to be appropriate OR 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: Data reference to both NTP (2014) HERO ID 5160132 and ECB (2006) HERO ID 1443911.

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).
OECD Harmonized Template:	Boiling Point
HERO ID:	5155561

EXTRACTION	
Parameter	Data
Boiling Point	Decomposes 316 - C
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
Confidentiality, Type, and Guideline	Not Reported; 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
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: No reference citedData already entered under HERO ID 1443911

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	Boiling Point
HERO ID:	5348102

EXTRACTION

Parameter	Data
Boiling Point	ca. 316 C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; 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'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**

Study Citation:	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.
OECD Harmonized Template:	Boiling Point
HERO ID:	4296199

EXTRACTION	
Parameter	Data
Boiling Point	approximately 316 - C
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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.
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 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: From: Kopp, A. (1990) Unterlagen über bromhaltige Flammschutzmittel. Document sent from Der Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit, Bonn, Federal Republic of Germany, to the European Economic Community, Brussels. Dated 14 March.

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.
OECD Harmonized Template:	Boiling Point
HERO ID:	7500050

EXTRACTION

Parameter	Data
Boiling Point	= 316 C
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	none; measured; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: commercial product; may not have been 100% pure
Standard Deviation Results	not reported
Results Details	decomposes before boiling

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 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 references: Stenger, 1978; WHO, 1995

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.			
OECD Harmonized Template:	Density			
HERO ID:	1443911			
EXTRACTION				
Parameter	Data			
Density	2.12 - 2.18 g/cm3			
CASRN and Test Material	79-94-7; tetrabromobisphenol A			
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; solid; NR			
Density Type	density			
System	not reported			
Temperature	Not Reported			
Standard Deviation Results	not reported			
Results Details	20°C for 2.12 g/cm3; temperature not reported for 2.18 g/cm3			
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 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	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:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).
OECD Harmonized Template:	Density
HERO ID:	5238261

EXTRACTION	
Parameter	Data
Density	= 2.12 - = 2.18 g/cm3
CASRN and Test Material	79-94-7; TBBPA
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 Notes: NR
Density Type	relative density
System	Not reported
Temperature	20°C
Standard Deviation Results	Not reported
Results Details	2.12 at 20°C (IUCLID, 2000); 2.18 (WHO, 1995)

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 non-standard but is expected to be appropriate OR 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.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination

High

* Related References: WHO (1995) and IUCLID (2000)

Study Citation:	IARC, (2018). Some Industrial Chemicals.			
OECD Harmonized Template:	Density			
HERO ID:	5160043			
EXTRACTION				
Parameter	Data			
Density	2.12 - g/cm3			
CASRN and Test Material	79-94-7; Not Reported			
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			
Density Type	Not Reported			
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	Medium	The analytical method is non-standard but is expected to be appropriate OR 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: Data reference to both NTP (2014) HERO ID 5160132 and ECB (2006) HERO ID 1443911.

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).			
OECD Harmonized Template:	Density			
HERO ID:	5155561			
EXTRACTION				
Parameter	Data			
Density	2.17 - not reported			
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A,			
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			
Density Type	relative density			
System	Not Reported			
Temperature	Not Reported			
Standard Deviation Results	Not Reported			
Results Details	reported as relative density			
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 non-standard but is expected to be appropriate OR 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: no references cited

Study Citation:	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.			
OECD Harmonized Template:	Density			
HERO ID:	4296199			
EXTRACTION				
Parameter	Data			
Density	2.18 -			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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			
Density Type	Specific gravity			
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	Medium	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 Kopp, A. (1990) Unterlagen über bromhaltige Flammschutzmittel. Document sent from Der Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit, Bonn, Federal Republic of Germany, to the European Economic Community, Brussels. Dated 14 March.

Study Citation:	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..
OECD Harmonized Template:	Density
HERO ID:	5926425

EXTRACTION

Parameter	Data
Density	2.158 g/cm3
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	19.85°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	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 secondary database with a references to the peer-reviewed original source.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination**High**

* Related References: Eriksson; Eriksson; Acta Crystallographica Section C: Crystal Structure Communications; vol. 57; nb. 11; (2001); p. 1308 - 1312

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Density
HERO ID:	1443931

EXTRACTION

Parameter	Data
Density	2.2 g/cm ³
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	4°C
Standard Deviation Results	Not Reported
Results Details	2.2 kg/L @ 4°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. 1703

Study Citation:	RSC, (2019). ChemSpider: Tetrabromobisphenol A.			
OECD Harmonized Template:	Density			
HERO ID:	5926266			
EXTRACTION				
Parameter	Data			
Density	1.76 g/cm3			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; NR; NR			
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	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		Medium		

* Related References: Alfa Aesar

Study Citation:	Inveresk Research International, (2002). Tetrabromobisphenol A determination of the particle size of tetrabromobisphenol A (TBBPA) by low angle laser light scattering (LALLS) using the Malvern Mastersizer X.
OECD Harmonized Template:	Particle Size
HERO ID:	12976567

EXTRACTION

Parameter	Data
Aerodynamic Value	27.06 µm (v,0.1:10% of the sample is smaller and 90% is larger than the stated size) - 52.20 µm (v,0.5: 50% of the sample is smaller and 50% is larger than the stated size)
CASRN and Test Material	Not Reported; TBBPA (Tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; Experimental; Analysis by Low Angle Laser Light Scattering
Solvent, Reactivity, Storage, and Stability	NA; NR; ambient conditions in the dark; NR
Radiolabel, Source, State, and Purity	NR; Great Lakes Chemical Corporation; Not Reported; NR
Method Type, Particle, Distribution, and Particle Size	Laser scattering/diffraction; primary particle; volumetric distribution; D50
Geometric Standard Deviation	coefficient of variation 3.19% - % coefficient of variation 5.75%
Mean	54.58 - 54.64 µm
Standard Deviation Mean	0.24-0.35%
Remarks	diluted samples indicated about 4% of the sample had a particle size of less than 15 µm
Page Number	Not Reported
Passage	Not Reported
Mean Size Passage	Not Reported
Distribution	Not Reported
Additional Passage 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)	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.

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Study Citation:	Inveresk Research International, (2002). Tetrabromobisphenol A determination of the particle size of tetrabromobisphenol A (TBBPA) by low angle laser light scattering (LALLS) using the Malvern Mastersizer X.
OECD Harmonized Template:	Particle Size
HERO ID:	12976567

Domain	Metric	EVALUATION Rating	Comments
Overall Quality Determination		High	

Study Citation:	Technology,, Chilworth (2006). [Redacted title] - (Batch No. C842175) - Group A/B Classification Test.
OECD Harmonized Template:	Particle Size
HERO ID:	12974710

EXTRACTION	
Parameter	Data
Aerodynamic Value	Not Reported
CASRN and Test Material	Not Reported; TBBPA
Confidentiality, Type, and Guideline	No; Experimental; particle size distribution using a Malvern Mastersizer 2000
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; fine, white powder; NR
Method Type, Particle, Distribution, and Particle Size	Laser scattering/diffraction; other; other; Not Reported
Geometric Standard Deviation	Not Reported
Mean	Not Reported
Standard Deviation Mean	Not Reported
Remarks	Test substance as received: 10% is less than 4.894 µm; 50% is less than 45.544 µm, 90% is less than 157.602 µm, result % less than 53 µM: 54.21
Page Number	Not Reported
Passage	Not Reported
Mean Size Passage	Not Reported
Distribution	Not Reported
Additional Passage Details	Test substance after milling: 10% is less than 0.894 µm; 50% is less than 7.342 µm, 90% is less than 42.379 µm, result % less than 53 µM: 92.83

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 assumed to be reliable based on the apparatus used however, limited details were reported.
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**Low**

Study Citation:	CECBP, (2008). Brominated and chlorinated organic chemical compounds used as flame retardants: Materials for the December 4-5, 2008 meeting of the California Environmental Contaminant Biomonitoring Program (CECBP): Scientific Guidance Panel (SGP): Agenda item: Consideration of potential designated chemicals.			
OECD Harmonized Template:	Vapor Pressure			
HERO ID:	4296230			
EXTRACTION				
Parameter	Data			
Vapor Pressure	< 8.9X10-8 mm Hg			
CASRN and Test Material	79-94-7; TBBPA			
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			
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	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	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		Medium		

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..
OECD Harmonized Template:	Vapor Pressure
HERO ID:	4824921

EXTRACTION

Parameter	Data
Vapor Pressure	4.68E-8 - torr
CASRN and Test Material	79-94-7; TBBPA
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
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.
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..
OECD Harmonized Template:	Vapor Pressure
HERO ID:	4824921

EXTRACTION	
Parameter	Data
Vapor Pressure	1.76E-11 - torr
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	no; estimated; 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 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	Estimated 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	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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..
OECD Harmonized Template:	Vapor Pressure
HERO ID:	4824921

EXTRACTION	
Parameter	Data
Vapor Pressure	< 8.9E-8 - torr
CASRN and Test Material	79-94-7; TBBPA
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
Temperature	20 C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	measured below limit of quantification

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 used measured data below the limit of quantitation.
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

Low

* Related References: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	1443911

EXTRACTION

Parameter	Data
Vapor Pressure	2.24x10 ⁻⁴ - 2.35x10 ⁻⁹ mm Hg
CASRN and Test Material	79-94-7; tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; calculation; NA
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	NA
Standard Deviation Results	NR
Results Details	Using MPBPWIN and entering input data MP of 206°C and BP of 486°C, MP of 180°C and BP of 486°C, and MP of 180°C and BP of 316°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	Calculated 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	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	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination	High
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Study Citation:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.			
OECD Harmonized Template:	Vapor Pressure			
HERO ID:	8775306			
EXTRACTION				
Parameter	Data			
Vapor Pressure	1.41E-7 - mm Hg			
CASRN and Test Material	79-94-7; TBBPA			
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			
Temperature	25 C			
System	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 (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 non-standard but is expected to be appropriate OR 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	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		

* Related References: Cites EPI Suite and secondary source EFSA, Scientific opinion on tetrabromobisphenol A (TBBPA) and its derivatives in food, EFSA J. 9 (2011) 2477. (HEROID 6586392).

Study Citation:	Fu, J., Suuberg, E. M. (2012). Vapor pressure of three brominated flame retardants determined by using the Knudsen effusion method. Environmental Toxicology and Chemistry 31(3):574-578.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	1927615

EXTRACTION

Parameter	Data
Vapor Pressure	0.00653 - 1.0 Pa
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	389-439.1 K
System	Knudsen effusion method
Standard Deviation Results	Not Reported
Results Details	mass fraction purity >0.98

EVALUATION

Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1: Representativeness	High	Data are measured for the subject chemical substance. Mass fraction purity >0.98.
	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)	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 obtained by accepted standard method: Knudsen effusion method.
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:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	1443931

EXTRACTION

Parameter	Data
Vapor Pressure	4.68E-8 mm Hg
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; 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: BRE. 2009. Brominated flame retardants - risks to UK drinking water sources. UK Department for Environment, Food, and Rural Affairs (Defra).

Study Citation:	IARC, (2018). Some Industrial Chemicals.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5160043

EXTRACTION

Parameter	Data
Vapor Pressure	6.24 X 10 ⁻⁹ - kPa
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
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 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 (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 non-standard but is expected to be appropriate OR 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: Data reference to both NTP (2014), HERO ID 5160132 and ECHA (2006), HERO ID 1443911.

Study Citation:	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5496178

EXTRACTION

Parameter	Data
Vapor Pressure	4.72E-9 Pa
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; Experimental; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	No; Sigma-Aldrich (Milwaukee, WI); Solid; 97%
Temperature	298 K
System	Knudsen effusion method
Standard Deviation Results	Not Reported
Results Details	Not Reported

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 and other physical/chemical properties.
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, 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**

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).			
OECD Harmonized Template:	Vapor Pressure			
HERO ID:	5155561			
EXTRACTION				
Parameter	Data			
Vapor Pressure	< 1.3 - hPa			
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A			
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	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 non-standard but is expected to be appropriate OR 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: No references cited

Study Citation:	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.			
OECD Harmonized Template:	Vapor Pressure			
HERO ID:	4296199			
EXTRACTION				
Parameter	Data			
Vapor Pressure	< 1 mm Hg			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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	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 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		Uninformative		

* Related References: From: Kopp, A. (1990) Unterlagen über bromhaltige Flammschutzmittel. Document sent from Der Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit, Bonn, Federal Republic of Germany, to the European Economic Community, Brussels. Dated 14 March.

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	4296130

EXTRACTION	
Parameter	Data
Vapor Pressure	4.7E-8 - mm Hg
CASRN and Test Material	NR; TBBPA
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	25 deg C
System	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 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 non-standard but is expected to be appropriate OR 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

High

* Related References: More details available in the full report, HERO ID 3860556.

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	7500050

EXTRACTION	
Parameter	Data
Vapor Pressure	< 8.9E-8 mm Hg
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	none; experimental; OECD Guideline 104
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	Spinning rotor gauge method
Standard Deviation Results	not reported
Results Details	Reported as <1.19x10 ⁻⁹ Pa

		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)	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, 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: Primary source cited: Lezotte and Nixon, 2001

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.			
OECD Harmonized Template:	Vapor Pressure			
HERO ID:	7500050			
EXTRACTION				
Parameter	Data			
Vapor Pressure	< 1 mm Hg			
CASRN and Test Material	79-94-7; TBBPA			
Confidentiality, Type, and Guideline	none; measured; not reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: 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.
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: WHO, 1995; Hardy and Smith, 1999

Study Citation:	Wildlife International Ltd, (2001). Determination of the vapor pressure of tetrabromobisphenol A using the spinning rotor gauge method.			
OECD Harmonized Template:	Vapor Pressure			
HERO ID:	6391024			
EXTRACTION				
Parameter	Data			
Vapor Pressure	< 1.19E-5 Pa			
CASRN and Test Material	79-94-7; Tetrabromobisphenol-A			
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 104: Vapor pressure			
Solvent, Reactivity, Storage, and Stability	NR; NR; ambient conditions; NR			
Radiolabel, Source, State, and Purity	No; Albemarle Corporation; Great Lakes Chemical Corporation; Bromine Compounds Ltd.; NR; 98.91% Notes: composite of 3 manufacturer samples			
Temperature	20±1.0°C			
System	Spinning rotor gauge method			
Standard Deviation Results	Not applicable			
Results Details	Vapor pressure was below the limit of quantitation of the method (i.e. >1.19E-5 Pa); 1 gram sample used for determination, 3 replicate runs; the limit of detection was defined as 3x the standard deviation for VP measurements of the blank = 3.57E-6 Pa; the limit of quantification was defined as 10x the standard deviation for VP measurements of the blank = 1.19E-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.
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	Low	Data are obtained by accepted standard analytical methods; however, the measured vapor pressure was below the limit of quantification of the method.
Domain 3: Other	Metric 5:	Databases	N/A	This metric is not applicable to this type of study.
	Metric 6:	Models	N/A	This metric is not applicable to this type of study.
Overall Quality Determination		Medium		

* Related References: Risk Assessment HERO ID 5238261

Study Citation:	CECBP, (2008). Brominated and chlorinated organic chemical compounds used as flame retardants: Materials for the December 4-5, 2008 meeting of the California Environmental Contaminant Biomonitoring Program (CECBP): Scientific Guidance Panel (SGP): Agenda item: Consideration of potential designated chemicals.			
OECD Harmonized Template:	logKow			
HERO ID:	4296230			
EXTRACTION				
Parameter	Data			
log <i>k_{ow}</i>	4.5 - 5.90			
CASRN and Test Material	79-94-7; TBBPA			
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			
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	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	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		Medium		

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.
OECD Harmonized Template:	logKow
HERO ID:	1443911

EXTRACTION	
Parameter	Data
log k_{ow}	4.54
CASRN and Test Material	79-94-7; 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol
Confidentiality, Type, and Guideline	None; experimental; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	14C-labelled; NR; NR; >98%
Temperature	not reported
System	adding required amount of test substance in a solvent to a centrifuge tube, evaporating the solvent and then adding 2 ml of n-octanol to dissolve the test substance.
pH	not reported
Results Details Method	radiochemical analysis
Standard Deviation Results	not reported
Results Details	result is mean of 2 concentrations, each run in duplicate

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)	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, 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

High

* Related References: Citing Yu CC (1978) Partition coefficients of several flame retardants and industrial chemicals. Velsicol Chemical Corporation Laboratory Report, April 1978. HERO ID 2779956

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).
OECD Harmonized Template:	logKow
HERO ID:	5238261

EXTRACTION	
Parameter	Data
log k_{ow}	= 6.4 -
CASRN and Test Material	79-94-7; tetrabromobisphenol-A
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 Notes: NR
Temperature	Not reported
System	HPLC method
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	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.
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination

High

* Related References: Watanabe and Tatsukawa (1989)

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).			
OECD Harmonized Template:	logKow			
HERO ID:	5238261			
EXTRACTION				
Parameter	Data			
log k_{ow}	= 3.25 -			
CASRN and Test Material	79-94-7; tetrabromobisphenol-A			
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 Notes: NR			
Temperature	Not reported			
System	Not reported			
pH	Not reported			
Results Details Method	Not reported			
Standard Deviation Results	Not reported			
Results Details	primary source in foreign language			
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.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination		High		

* Related References: Ogino et al., 1987

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).			
OECD Harmonized Template:	logKow			
HERO ID:	5238261			
EXTRACTION				
Parameter	Data			
log k _{ow}	= 4.54 -			
CASRN and Test Material	79-94-7; 14C-labelled tetrabromobisphenol A			
Confidentiality, Type, and Guideline	None; experimental; Non-guideline: shake flask			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	14C-labelled; NR; NR; >98% Notes: NR			
Temperature	not reported			
System	n-octanol and distilled water			
pH	not reported			
Results Details Method	analysis via a radiochemical method			
Standard Deviation Results	not reported			
Results Details	mean Kow = 34,644; log Kow = 4.54			
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 and other physical/chemical properties.	
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 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.	
	Metric 6: Models	N/A	Rating of this factor is not applicable to this kind of information.	
Overall Quality Determination		High		

* Related References: Yu 1978

Study Citation:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.
OECD Harmonized Template:	logKow
HERO ID:	8775306

EXTRACTION	
Parameter	Data
log k_{ow}	9.70 -
CASRN and Test Material	79-94-7; TBBPA
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
Temperature	25 C
System	NR
pH	NR
Results Details Method	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	Medium	Value is orders of magnitude higher than other reported values.
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 non-standard but is expected to be appropriate OR 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	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

Low

* Related References: Cites EPI Suite and secondary source EFSA, Scientific opinion on tetrabromobisphenol A (TBBPA) and its derivatives in food, EFSA J. 9 (2011) 2477. (HEROID 6586392).

Study Citation:	Elsevier, (2019). Reaxys: physical-chemical property data for tetrabromobisphenol A. CAS Registry Number: 79-94-7..
OECD Harmonized Template:	logKow
HERO ID:	5926425

EXTRACTION	
Parameter	Data
log k_{ow}	7.2
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Measured conditions were not reported.

EVALUATION			
Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High
	Metric 2:	Appropriateness	High
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium
	Metric 4:	Reliability/Analytical Method	Medium
Domain 3: Other	Metric 5:	Databases	High
	Metric 6:	Models	N/A

Overall Quality Determination

High

* Related References: Breitholtz, Magnus; Nyholm, Jenny Rattfelt; Karlsson, Jenny; Andersson, Patrik L.; Chemosphere; vol. 72; nb. 9; (2008); p. 1242 - 1249

Study Citation:	Esch, Van, G. J. (1995). Tetrabromobisphenol A and derivatives / first draft prepared by G. J. van Esch.
OECD Harmonized Template:	logKow
HERO ID:	6670287

EXTRACTION	
Parameter	Data
log k_{ow}	4.5 - 5.3
CASRN and Test Material	79-94-7; TBBPA
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
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 non-standard but is expected to be appropriate OR 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 from Bayer (1990) Chemical dossier on tetrabromobisphenol A. Leverkusen, Germany, Bayer AG (Unpublished report).

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	logKow
HERO ID:	1443931

EXTRACTION	
Parameter	Data
log k_{ow}	4.75
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	25 C
System	Not Reported
pH	7.53
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: Kuramochi, H et al. 2008. Environ Toxicol Chem 27(12): 2413-18. HERO ID 5496178

Study Citation:	IARC, (2018). Some Industrial Chemicals.
OECD Harmonized Template:	logKow
HERO ID:	5160043

EXTRACTION

Parameter	Data
log k_{ow}	5.9 -
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
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
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 non-standard but is expected to be appropriate OR 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: Data reference to both NTP (2014), HERO ID 5160132 and ECHA (2006), HERO ID 1443911.

Study Citation:	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.
OECD Harmonized Template:	logKow
HERO ID:	5496178

EXTRACTION	
Parameter	Data
log k_{ow}	4.75
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; Experimental; OPPTS 830.7560
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	No; Sigma-Aldrich (Milwaukee, WI); Solid; 97%
Temperature	298 K
System	Generator column method
pH	7.53
Results Details Method	Not Reported
Standard Deviation Results	± 0.07
Results Details	log Kow 6.53 at pH 3.05 for nonionic form

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 and other physical/chemical properties.
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, 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

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).
OECD Harmonized Template:	logKow
HERO ID:	5155561

EXTRACTION	
Parameter	Data
log k_{ow}	4.54 -
CASRN and Test Material	79-94-7; Not Reported
Confidentiality, Type, and Guideline	Not Reported; Not Reported; 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
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: No references citedData already entered under HERO ID: 1443911

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	logKow
HERO ID:	5348102

EXTRACTION	
Parameter	Data
log k_{ow}	4.5
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; 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'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. 1702-1703.

Study Citation:	RSC, (2019). ChemSpider: Tetrabromobisphenol A.			
OECD Harmonized Template:	logKow			
HERO ID:	5926266			
EXTRACTION				
Parameter	Data			
log k_{ow}	5.682			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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; 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’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.
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Study Citation:	RSC, (2019). ChemSpider: Tetrabromobisphenol A.			
OECD Harmonized Template:	logKow			
HERO ID:	5926266			
EVALUATION				
Domain		Metric	Rating	Comments
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination

Medium

* Related References: LabNetwork

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.
OECD Harmonized Template:	logKow
HERO ID:	4296130

EXTRACTION	
Parameter	Data
log k_{ow}	4.54 -
CASRN and Test Material	NR; TBBPA
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	NR
System	NR
pH	NR
Results Details Method	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 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 non-standard but is expected to be appropriate OR 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

High

* Related References: More details available in the full report, HERO ID 3860556.

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.
OECD Harmonized Template:	logKow
HERO ID:	7500050

EXTRACTION	
Parameter	Data
log k_{ow}	4.54 -
CASRN and Test Material	79-94-7; Not Reported
Confidentiality, Type, and Guideline	No; experimental; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	14C-labelled; NR; NR; >98%
Temperature	Not reported
System	adding required amount of test substance in a solvent to a centrifuge tube, evaporating the solvent and then adding 2 ml of n-octanol to dissolve the test substance
pH	Not reported
Results Details Method	radiochemical analysis
Standard Deviation Results	Not reported
Results Details	result is mean of 2 concentrations, each run in duplicate

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)	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, 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	High
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* Related References: Cited Yu (1978) under Velsicol Chemical Corp (1990) HERO ID 2779956

Study Citation:	Velsicol Chem Corp, (1978). Partition coefficient of several flame retardants and industrial chemicals.
OECD Harmonized Template:	logKow
HERO ID:	2779941

EXTRACTION	
Parameter	Data
log k_{ow}	4.5 -
CASRN and Test Material	79-94-7; TBBPA (Tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; Experimental; Method described by Leo, Hansch and Elkins 1971
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	BP-4A: tetrabromobisphenol A-(phenyl-UL-14C), 9.32 mCi/mM; Midwest Research Institute Kansas City, Mo.; NR; NR
Temperature	NR
System	concentrations measured in organic and aqueous phases and partition coefficients calculated
pH	NR
Results Details Method	Radioassay in Handifluor solution via Mark III Liquid Scintillation System; counting efficiency 85-88%
Standard Deviation Results	Not Reported
Results Details	log Kow = 4.54 (log of reported average value from 4 test results: 34,644)

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)	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:	Wildlife International Ltd, (2001). Determination of the n-octanol/water partition coefficient of tetrabromobisphenol A.		
OECD Harmonized Template:	logKow		
HERO ID:	1443955		
EXTRACTION			
Parameter	Data		
log <i>k_{ow}</i>	5.903		
CASRN and Test Material	79-94-7; TBBPA		
Confidentiality, Type, and Guideline	None; Experimental; U.S. EPA OPPTS 830.7560		
Solvent, Reactivity, Storage, and Stability	Octanol; NR; NR; NR		
Radiolabel, Source, State, and Purity	NA; Albemarle Corporation; NR; 98.91% Notes: 0.05% o,p'-Tetrabromobisphenol A; < 0.01% 2,4,6-Tribromophenol; 1.04% Tribromobisphenol-A		
Temperature	25±0.05°C		
System	Column packed with Chromosorb W HP support and loaded with 1.0% w/w test substance in octanol. Octanol saturated reagent water pumped through column at 1.0 mL/min.		
pH	Not Reported		
Results Details Method	HPLC/MS in the negative selective ion monitoring mode; LOQ=0.00200 mg/L; mean recovery = 95.5±4.0%		
Standard Deviation Results	±0.0340		
Results Details	Kow=8.024E5±6.20E4		
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).
Domain 2: Test Reliability	Metric 3: Reliability/Unbiased (Method Objectivity)	High	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 analytic 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:	Agroscience., E.E., LLC, (2022). Determination of water solubility.
OECD Harmonized Template:	Water Solubility
HERO ID:	10290671

EXTRACTION	
Parameter	Data
Water Solubility	0.199 - mg/L
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	None; Experimental; OPPTS 830.7840, Water Solubility: Column Elution Method
Solvent, Reactivity, Storage, and Stability	Methanol (for reference); NR; ambient in darkness; NR
Radiolabel, Source, State, and Purity	NR; Adpen; Alfa Aesar; White powder; 99.5% (HPLC) Notes: Received 01/07/2021 lot/batch# 10153881
Temperature	23± 0.1°C
System	Column elution method hybrid method based on U.S. EPA Product Properties Test Guideline, OPPTS 830.7840, Water Solubility: Column Elution Method; Shake Flask Method using a generator column per OPPTS 830.7860 with minor modifications instead of the OPPTS 830.7840 guideline recommended columns
pH	8.96 and 8.63 for reagent water at 23 and 37±0.1°C studies, respectively. 7.02, 7.80 and 7.52, 8.40 for aqueous samples at 1 or 0.5 ml/min flow rates at 23 and 37°C, respectively
Results Details Method	LC/MS/MS
Standard Deviation Results	0.199±0.026 (CV=13%) and 0.299±0.032 (CV=11%) at 23 and 37°C, respectively
Results Details	0.299 mg/L at 37±0.1°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	Measured data are consistent with the subject chemical's physical/chemical properties.
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, 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

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..
OECD Harmonized Template:	Water Solubility
HERO ID:	4824921

EXTRACTION	
Parameter	Data
Water Solubility	0.24 - mg/L
CASRN and Test Material	79-94-7; TBBPA
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 C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Pure 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.
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD.ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..			
OECD Harmonized Template:	Water Solubility			
HERO ID:	4824921			
EXTRACTION				
Parameter	Data			
Water Solubility	1.26 - mg/L			
CASRN and Test Material	79-94-7; TBBPA			
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 C			
System	Not Reported			
pH	7			
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD.ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..			
OECD Harmonized Template:	Water Solubility			
HERO ID:	4824921			
EXTRACTION				
Parameter	Data			
Water Solubility	0.148 - mg/L			
CASRN and Test Material	79-94-7; TBBPA			
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 C			
System	Not Reported			
pH	5			
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD.ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..			
OECD Harmonized Template:	Water Solubility			
HERO ID:	4824921			
EXTRACTION				
Parameter	Data			
Water Solubility	2.34 - mg/L			
CASRN and Test Material	79-94-7; TBBPA			
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 C			
System	Not Reported			
pH	9			
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD.ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..			
OECD Harmonized Template:	Water Solubility			
HERO ID:	4824921			
EXTRACTION				
Parameter	Data			
Water Solubility	0.063 - mg/L			
CASRN and Test Material	79-94-7; TBBPA			
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	21 C			
System	Not Reported			
pH	Not Reported			
Results Details Method	Not Reported			
Standard Deviation Results	Not Reported			
Results Details	Pure 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.
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD.ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.
OECD Harmonized Template:	Water Solubility
HERO ID:	1443911

EXTRACTION	
Parameter	Data
Water Solubility	0.046 - 0.082 mg/L
CASRN and Test Material	79-94-7; 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol
Confidentiality, Type, and Guideline	None; experimental; OECD 105
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; composite sample from 3 manufacturers; NR; NR
Temperature	21°C
System	column filled with inert carrier eluted with double distilled water at various flow rates
pH	7.6-8.1
Results Details Method	HPLC
Standard Deviation Results	not reported
Results Details	average value 0.063 mg/L; preliminary test @ pH 6.6 resulted in 0.077-0.081 mg/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)	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, 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

High

* Related References: NOTOX (2000). Determination of the water solubility of tetrabromobisphenol A. NOTOX Project 292804, NOTOX B. V., Hertogenbosch. HERO ID 1443968

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.
OECD Harmonized Template:	Water Solubility
HERO ID:	1443911

EXTRACTION	
Parameter	Data
Water Solubility	0.148 - 2.34 mg/L
CASRN and Test Material	79-94-7; 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol
Confidentiality, Type, and Guideline	None; experimental; OECD 105
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; composite sample from 3 manufacturers; NR; 99.17%
Temperature	25°C
System	column elution with buffered solutions and pure water at 1 and 0.5 mL/min flow rates
pH	5; 7; 9; 6.71
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	mean @ pH 5, 7, 9 was 0.148, 1.26, 2.34 mg/L, respectively. 0.240 mg/L in pure 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
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, 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

High

* Related References: Wildlife International (2002b) Determination of water solubility of tetrabromobisphenol-A. Wildlife International Ltd., Project Number 439C-132. HERO ID 1443956

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).
OECD Harmonized Template:	Water Solubility
HERO ID:	5238261

EXTRACTION	
Parameter	Data
Water Solubility	= 0.077 - = 0.081 mg/L
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	None; experimental; Preliminary test based on OECD 105
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; composite from 3 manufacturers; NR; NR Notes: NR
Temperature	21°C
System	water solubility in double distilled water; stirring occurred for 2 days
pH	pH of solution after stirring = 6.6
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	concentration of tetrabromobisphenol-A in the dissolved phase = 0.077-0.081 mg/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)	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 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: NOTOX, 2000

Study Citation:	ECB, (2008). Risk assessment of 2,2’,6,6’-tetrabromo-4,4’-isopropylidene diphenol (tetrabromobisphenol-A).			
OECD Harmonized Template:	Water Solubility			
HERO ID:	5238261			
EXTRACTION				
Parameter	Data			
Water Solubility	= 0.236 - = 0.243 mg/L			
CASRN and Test Material	79-94-7; TBBPA			
Confidentiality, Type, and Guideline	None; experimental; column elution method based on OECD 105			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; composite from 3 manufacturers; NR; 99.17% Notes: NR			
Temperature	25°C			
System	water solubility in pure water			
pH	pH of water = 6.7; pH of column effluent was 6.83-7.23 at flow rate of 1 ml/min and 6.79-7.12 at flow rate of 0.5 ml/min			
Results Details Method	not reported			
Standard Deviation Results	±0.0019			
Results Details	Range 0.236 - 0.243 at 1 ml/min flow rate, and 0.240 - 0.242 mg/L at 0.5 ml/min. Overall mean water solubility for both flow rates = 0.240 mg/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)	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 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: Wildlife International, 2002

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).			
OECD Harmonized Template:	Water Solubility			
HERO ID:	5238261			
EXTRACTION				
Parameter	Data			
Water Solubility	= 0.046 - = 0.082 mg/L			
CASRN and Test Material	79-94-7; TBBPA			
Confidentiality, Type, and Guideline	None; experimental; Column elution test based OECD 105			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	NR; composite from 3 manufacturers; NR; NR Notes: NR			
Temperature	21°C			
System	water solubility in double distilled water; stirring occurred for 2 days			
pH	effluent pH 7.9-8.1			
Results Details Method	HPLC			
Standard Deviation Results	not reported			
Results Details	Average solubility = 0.063 mg/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)	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 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: NOTOX, 2000

Study Citation:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.
OECD Harmonized Template:	Water Solubility
HERO ID:	8775306

EXTRACTION	
Parameter	Data
Water Solubility	1.00E-3 - mg/L
CASRN and Test Material	79-94-7; TBBPA
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
Temperature	25 C
System	NR
pH	NR
Results Details Method	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 (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 non-standard but is expected to be appropriate OR 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	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

* Related References: Cites EPI Suite and secondary source EFSA, Scientific opinion on tetrabromobisphenol A (TBBPA) and its derivatives in food, EFSA J. 9 (2011) 2477. (HEROID 6586392).

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	Water Solubility
HERO ID:	1443931

EXTRACTION	
Parameter	Data
Water Solubility	4.15 mg/L
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	25°C
System	Not Reported
pH	7.56
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: Kuramochi, H et al. 2008. Environ Toxicol Chem 27(12): 2413-18. HERO ID 5496178

Study Citation:	IARC, (2018). Some Industrial Chemicals.
OECD Harmonized Template:	Water Solubility
HERO ID:	5160043

EXTRACTION	
Parameter	Data
Water Solubility	1.26 - mg/L
CASRN and Test Material	79-94-7; 2,2',6,6'-Tetrabromobisphenol A
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 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 (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 non-standard but is expected to be appropriate OR 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

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Study Citation:	IARC, (2018). Some Industrial Chemicals.		
OECD Harmonized	Water Solubility		
Template:			
HERO ID:	5160043		
		EVALUATION	
Domain	Metric	Rating	Comments
Overall Quality Determination		High	

* Related References: Data reference to both NTP (2014), HERO ID 5160132 and ECHA (2006), HERO ID 1443911.

Study Citation:	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.
OECD Harmonized Template:	Water Solubility
HERO ID:	5496178

EXTRACTION	
Parameter	Data
Water Solubility	4.15 mg/L
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; Experimental; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	No; Sigma-Aldrich (Milwaukee, WI); Solid; 97%
Temperature	298 K
System	Shake flask method
pH	7.56
Results Details Method	Not Reported
Standard Deviation Results	±0.36
Results Details	0.171 mg/L for nonionic form at pH 3.05

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 and other physical/chemical properties.
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, 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

Study Citation:	NICNAS, (2001). Priority existing chemical assessment report no. 20: Polybrominated flame retardants (PBFRs).
OECD Harmonized Template:	Water Solubility
HERO ID:	5155561

EXTRACTION	
Parameter	Data
Water Solubility	< 0.08 - mg/L
CASRN and Test Material	79-94-7; TBBPA
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.
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 non-standard but is expected to be appropriate OR 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 from BSEF (2000) Determination of the water solubility of Tetrabromobisphenol A. Report no.292804. March, 2000. NOTOX B.V. Hambakenwetering 7. 5231 DD's - Hertogenbosch. (HERO ID: 1443968)

Study Citation:	NOTOX, (2000). Determination of the water solubility of tetrabromobisphenol A.
OECD Harmonized Template:	Water Solubility
HERO ID:	1443968

EXTRACTION	
Parameter	Data
Water Solubility	<= 0.08 mg/L
CASRN and Test Material	Not Reported; TBBPA (tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; experimental; OECD Guideline 105 (column elution method)
Solvent, Reactivity, Storage, and Stability	for preparations: acetic acid, acetone, acetonitrile, Milli-Q water; NR; room temperature in the dark; NR
Radiolabel, Source, State, and Purity	NR; Composite sample containing equal amounts of test substance from Albermarle (batch 8721-33, Bromine Compounds (batch 20001096) and Great Lakes Chemical Corp (batch 20001096); white crystalline powder; $97.5 \pm 1.3\%$ w/w Notes: purity based on HPLC analysis at 230 nm
Temperature	21.5 ± 1.0 deg C
System	HPLC method
pH	7.6-8.1
Results Details Method	HPLC
Standard Deviation Results	The coefficient of variation ranged from 1.7% to 13% across replicate analyses at different concentrations.
Results Details	2 test columns were run alongside a blank column; calculations based on not-rounded concentrations. Individual concentrations analyzed ranged from 0.42-0.134 mg/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)	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:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	Water Solubility
HERO ID:	5348102

EXTRACTION	
Parameter	Data
Water Solubility	4.16 mg/L
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; 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'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. 1702-1703.

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	Water Solubility
HERO ID:	5348102

EXTRACTION	
Parameter	Data
Water Solubility	1.77 mg/L
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
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; NR; NR
Temperature	35°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 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. 1702-1703.

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	Water Solubility
HERO ID:	5348102

Parameter	Data	EXTRACTION
Water Solubility	0.72 mg/L	
CASRN and Test Material	79-94-7; Tetrabromobisphenol A	
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; NR; NR	
Temperature	15°C	
System	Not Reported	
pH	Not reported	
Results Details Method	Not Reported	
Standard Deviation Results	Not Reported	
Results Details	Not Reported	

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. 1702-1703.

Study Citation:	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.			
OECD Harmonized Template:	Water Solubility			
HERO ID:	4296199			
EXTRACTION				
Parameter	Data			
Water Solubility	0.72 mg/L			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
Confidentiality, Type, and Guideline	no; not specified; Not Reported			
Solvent, Reactivity, Storage, and Stability	water; Not Reported; Not Reported; Not Reported			
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported			
Temperature	15°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	Medium	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: From: Kopp, A. (1990) Unterlagen über bromhaltige Flammschutzmittel. Document sent from Der Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit, Bonn, Federal Republic of Germany, to the European Economic Community, Brussels. Dated 14 March.

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards: Chapter 5, final report.
OECD Harmonized Template:	Water Solubility
HERO ID:	4296130

EXTRACTION	
Parameter	Data
Water Solubility	4.16 - mg/L
CASRN and Test Material	NR; TBBPA
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	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 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

High

* Related References: More details available in the full report, HERO ID 3860556.

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.
OECD Harmonized Template:	Water Solubility
HERO ID:	7500050

EXTRACTION	
Parameter	Data
Water Solubility	= 0.082 - mg/L
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	none; measured; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
System	measured water solubility was dependent on the flow rates through the column
pH	7.6-8.1
Results Details Method	not reported; samples were centrifuged to remove dispersed TBBPA
Standard Deviation Results	not reported
Results Details	not reported

		EVALUATION	
Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High
	Metric 2:	Appropriateness	High
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium
	Metric 4:	Reliability/Analytical Method	Low
Domain 3: Other	Metric 5:	Databases	High
	Metric 6:	Models	N/A

Overall Quality Determination

High

* Related References: Submitted confidential study (NOTOX, 2000, HERO ID 1443968)

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.
OECD Harmonized Template:	Water Solubility
HERO ID:	7500050

Parameter	Data
Water Solubility	= 1.26 - mg/L
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	none; measured; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
System	measured water solubility was dependent on the flow rates through the column
pH	5, 7, 9
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	Water solubility = 0.148 at pH 5, 1.26 at pH 7, and 2.34 at pH 9

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: Submitted confidential study (Wildlife International (2002) HERO ID 1443956 as cited in ECB (2006) HERO ID 1443911)

Study Citation:	Velsicol Chem Corp, (1978). Partition coefficient of several flame retardants and industrial chemicals.
OECD Harmonized Template:	Water Solubility
HERO ID:	2779941

EXTRACTION	
Parameter	Data
Water Solubility	3.66 - 4.66 ppm
CASRN and Test Material	79-94-7; TBBPA (Tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; Experimental; Shaken overnight, centrifuged and analyzed by radioassay
Solvent, Reactivity, Storage, and Stability	acetone; NR; NR; NR
Radiolabel, Source, State, and Purity	BP-4A: tetrabromobisphenol A-(phenyl-UL-14C), 9.32 mCi/mM; Midwest Research Institute Kansas City, Mo.; NR; >98% radiochemical purity
Temperature	25 deg C (data for 15 and 35 deg C not extracted)
System	Tubes with distilled water shaken overnight and centrifuged for 1 hr prior to radioassay
pH	NR
Results Details Method	Radioassay in Handifluor solution via Mark III Liquid Scintillation System; counting efficiency 70-85%
Standard Deviation Results	NR
Results Details	Average water solubility (based on 2 tests) = 4.16 ppm at 25 deg C, 0.72 at 15 deg C and 1.77 at 35 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	High	Measured data are consistent with the subject chemical substance structural features.
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	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

* Related References: PDF pages 7-12 are same as HERO ID 5546500

Study Citation:	Velsicol Chem Corp, (1978). Water solubility of several flame retardants and industrial chemicals.
OECD Harmonized Template:	Water Solubility
HERO ID:	5546500

EXTRACTION	
Parameter	Data
Water Solubility	3.66 - 4.66 ppm
CASRN and Test Material	79-94-7; TBBPA (tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; experimental; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	BP-4A: tetrabromobisphenol A-(phenyl-UL-14C), 9.32 mCi/mM; Midwest Research Institute Kansas City, Mo.; NR; >98% radiopurity
Temperature	25 deg C
System	14C-labeled material placed in centrifuge tube with distilled water and shaken overnight
pH	NR
Results Details Method	Radioassay in Handifluor solution via Mark III Liquid Scintillation System; counting efficiency 70-85%
Standard Deviation Results	NR
Results Details	Average water solubility (based on 2 tests) = 4.16 ppm at 25 deg C, 0.72 at 15 deg C and 1.77 at 35 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	High	Measured data are consistent with the subject chemical substance structural features.
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	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

* Related References: PDF pages 7-12 are same as HERO ID 2779941

Study Citation:	Velsicol Chem Corp, (1990). Water solubility of several flame retardants and industrial chemicals with test data and cover letter.			
OECD Harmonized Template:	Water Solubility			
HERO ID:	5547550			
EXTRACTION				
Parameter	Data			
Water Solubility	0.72 - 4.16 ppm			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
Confidentiality, Type, and Guideline	None; Experimental; Not reported			
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity	Yes: tetrabromobisphenol A - (phenyl-UL-14C) 9.32 mCi/mM; Midwest Research Institute, Kansas City, MO; NR; >98%			
Temperature	25°C (15°C and 35°C also measured)			
System	Test method: Shake-flask/Centrifugation			
pH	Not reported			
Results Details Method	Radioassay: Mark III Liquid Scintillation System (counting efficiency ca. 70-85%)			
Standard Deviation Results	Not reported			
Results Details	Average of duplicate analysis at 25 deg C = 4.16 ppm; (15 deg C = 0.72 ppm and 35 deg C = 1.77 ppm)			
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)	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	Data are obtained by non-guideline standard analytical methods.
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:	Wildlife International Ltd, (2008). Determination of water solubility of tetrabromobisphenol A.
OECD Harmonized Template:	Water Solubility
HERO ID:	12976571

EXTRACTION	
Parameter	Data
Water Solubility	1.10 ± 0.032 mg/L
CASRN and Test Material	79-94-7; TBBPA (tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; experimental; OECD Guideline 105 (generator column method)
Solvent, Reactivity, Storage, and Stability	for preparations: acetonitrile, methanol, acetone; NR; ambient room temperature in the dark; NR
Radiolabel, Source, State, and Purity	NR; Albermarle; solid; 98.82% Notes: SAYTEX® CP-2000
Temperature	25.0 ± 0.1 °C
System	Generator column method and aqueous buffer solutions
pH	7.0 (aqueous buffered solution)
Results Details Method	HPLC/UV; calibration curves obtained with standard solutions; LOQ = 0.200 mg/L
Standard Deviation Results	± 0.032 mg/L
Results Details	The overall mean water solubility at pH 7 and 25 °C was 1.10 ± 0.032 mg/L, based on two samples collected at column flow rates of 1.0 and 0.5 mL/min. At pH 5 and 25 °C, the mean solubility was 0.124 ± 0.0087 mg/L. Solubility at pH 9 could not be determined because column-solute equilibrium was not achieved.

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)	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:	Wildlife International Ltd, (2002). Determination of water solubility of tetrabromobisphenol A.			
OECD Harmonized Template:	Water Solubility			
HERO ID:	1443956			
EXTRACTION				
Parameter	Data			
Water Solubility	= 0.24 (non-buffered water) - = 1.26 (pH 7) mg/L			
CASRN and Test Material	79-94-7; TBBPA (tetrabromobisphenol A)			
Confidentiality, Type, and Guideline	No; experimental; OECD Guideline 105			
Solvent, Reactivity, Storage, and Stability	for preparations acetone, methanol, acetonitrile; NR; ambient conditions; NR			
Radiolabel, Source, State, and Purity	NR; Composite sample containing test substance from Great Lakes Chemical Corp. (batch 1008JE04B), Albemarle Corp. (batch 25115T-1), Bromine Compounds Corp (batch 010040); NR; 99.17%			
Temperature	25.0 ± 0.1 °C			
System	buffered pH 7 water and nano-pure, non-buffered reagent water using a generator column method			
pH	7.0			
Results Details Method	HPLC/UV with direct injection; calibration curves obtained with stock solutions of TBBPA; LOQ = 0.200 mg TBBPA/L for pH 7.0 and 0.100 mg TBBPA/L for non-buffered system; mean recoveries (pH 7) 101%, (non-buffered) 99.1%			
Standard Deviation Results	NR			
Results Details	mean water solubility at pH 7, 25 deg C: 1.26 mg/L; mean water solubility in non-buffered reagent water at 25 deg C = 0.24 mg/L. Results at pH 5 and 9 also reported. The water solubility in pH 5.0 buffer = 0.148 mg TBBPA/L. The water solubility in pH 9.0 = 2.34 mg TBBPA/L.			
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.
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, 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		High		

Study Citation:	OECD, (1994). Risk reduction monograph no.3: Selected brominated flame retardants: Background and national experience with reducing risk.			
OECD Harmonized Template:	Flash Point			
HERO ID:	4296199			
EXTRACTION				
Parameter	Data			
Flash Point	178 C			
CASRN and Test Material	79-94-7; Tetrabromobisphenol A			
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			
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 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: From: Kopp, A. (1990) Unterlagen über bromhaltige Flammschutzmittel. Document sent from Der Bundesminister für Umwelt, Naturschutz und Reaktorsicherheit, Bonn, Federal Republic of Germany, to the European Economic Community, Brussels. Dated 14 March.

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.			
OECD Harmonized Template:	Autoflammability			
HERO ID:	1443931			
EXTRACTION				
Parameter	Data			
Auto-flammability	Not reported			
CASRN and Test Material	79-94-7; TBBPA			
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			
System	Not reported			
Standard Deviation Results	Not reported			
Results Details	Flammability not applicable for a flame retardant; however, the compound decomposes at 200-300°C in boiling point studies			
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	No analytical method was reported 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: EU; European Union Risk Assessment Report 2,2',6,6'-Tetrabromo-4,4'-isopropylidenediphenol (CAS No. 79-94-7), Part II - Human Health, Final Report 2006. HERO ID 1443911

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.			
OECD Harmonized Template:	pKa			
HERO ID:	1443911			
EXTRACTION				
Parameter	Data			
pK _a	9.4			
CASRN and Test Material	79-94-7; 2,2 ',6,6' -tetrabromo-4,4' -isopropylidenediphenol			
Confidentiality, Type, and Guideline	None; Experimental; OECD Guideline 112			
Solvent, Reactivity, Storage, and Stability	Hexane; NR; NR; NR			
Radiolabel, Source, State, and Purity	None; NR; NR; NR			
Temperature	not reported			
System	not reported			
pH	6.0 to 12.0 (0.5 pH intervals evaluated)			
Results Details Method	HPLC			
Standard Deviation Results	not reported			
Results Details	pKa 9.40			
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 reported for 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)	Low	The methodology indicates that method bias is likely.
	Metric 4:	Reliability/Analytical Method	Uninformative	The report states, the study is unreliable. The analytical method does not distinguish between the dissociated forms of TBBPA and the study determined the effect of pH on the extraction of TBBPA rather than actual pKa values.
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		Uninformative		

* Related References: Citing Wildlife International (2002c) Determination of the dissociating constant for tetrabromobisphenol-A Wildlife International Ltd., Project Number 439C-130. HERO ID 1443953

Study Citation:	ECB, (2006). European Union risk assessment report: 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol (tetrabromobisphenol-A or TBBP-A) Part II – human health.		
OECD Harmonized Template:	pKa		
HERO ID:	1443911		
EXTRACTION			
Parameter	Data		
pK _a	7.5 - 8.5		
CASRN and Test Material	79-94-7; 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol		
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	pKa1 = 7.5; pKa2 = 8.5; ionized forms of TBBPA will be prevalent in the environmental pHs of >7-8		
EVALUATION			
Domain	Metric	Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	High
	Metric 2:	Appropriateness	Medium
Domain 2: Test Reliability	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium
	Metric 4:	Reliability/Analytical Method	Medium
Domain 3: Other	Metric 5:	Databases	High
	Metric 6:	Models	N/A
Overall Quality Determination		High	

* Related References: Citing WHO (1995) Environmental Health Criteria 172. Tetrabromobisphenol A and derivatives. International Programme on Chemical Safety. World Health Organization, Geneva.

Study Citation:	ECB, (2008). Risk assessment of 2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol (tetrabromobisphenol-A).
OECD Harmonized Template:	pKa
HERO ID:	5238261

EXTRACTION	
Parameter	Data
pK _a	= 7.5 - = 8.5
CASRN and Test Material	79-94-7; TBBPA
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: NR
Temperature	not reported
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	pKa1 = 7.5; pKa2 = 8.5

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	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	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: WHO, 1995

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	pKa
HERO ID:	1443931

EXTRACTION	
Parameter	Data
pK _a	= 7.5 - = 8.5
CASRN and Test Material	79-94-7; TBBPA
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 Notes: NR
Temperature	not reported
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	pKa1 = 7.50; pKa2 = 8.5

		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: EU; European Union Risk Assessment Report 2,2',6,6'-Tetrabromo-4,4'-isopropylidenediphenol (CAS No. 79-94-7), Part II - Human Health, Final Report 2006. HERO ID 1443911

Study Citation:	HSDB, (2018). 2,2',6,6'-Tetrabromobisphenol A - CASRN: 79-94-7.
OECD Harmonized Template:	pKa
HERO ID:	1443931

EXTRACTION	
Parameter	Data
pK _a	= 9.4
CASRN and Test Material	79-94-7; TBBPA
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 Notes: 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, 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: ECHA; Search for Chemicals. 2,2',6,6'-Tetrabromobisphenol A (79-94-7) Registered Substances Dossier. European Chemical Agency. Available from, as of Apr 9, 2019. HERO ID 5230716

Study Citation:	O’Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.			
OECD Harmonized Template:	pKa			
HERO ID:	5348102			
EXTRACTION				
Parameter	Data			
pK _a	7.5 - 8.5			
CASRN and Test Material	Not Reported; tetrabromobisphenol A			
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			
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	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 data is from 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		

Study Citation:	U.S. EPA, (2019). Proposed designation of 4,4'-(1-methylethylidene)bis [2,6-dibromophenol] (CASRN 79-94-7) as a high-priority substance for risk evaluation.
OECD Harmonized Template:	pKa
HERO ID:	6305896

EXTRACTION	
Parameter	Data
pK _a	= 7.50 - = 9.40
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	None; not specified; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	pKa1=7.50; pka2=8.5; pKa = 9.40 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	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.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination

High

* Related References: ECB, 2006 HERO ID 1443911; HSDB 2018; ECHA 2018 HERO ID 5230716

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.
OECD Harmonized Template:	pKa
HERO ID:	7500050

EXTRACTION	
Parameter	Data
pK _a	= 9.4
CASRN and Test Material	79-94-7; TBBPA
Confidentiality, Type, and Guideline	none; measured; OECD 112
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
System	Method based on OECD Guideline 112
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)	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, 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: Primary source cited: Wildlife International, 2002 Authors: Lezotte and Nixon. HERO ID 1443953

Study Citation:	U.S. EPA, (2015). Flame retardants in printed circuit boards. Final report.			
OECD Harmonized Template:	pKa			
HERO ID:	7500050			
EXTRACTION				
Parameter		Data		
pK _a		= 7.5 - = 8.5		
CASRN and Test Material		79-94-7; TBBPA		
Confidentiality, Type, and Guideline		none; not specified; not specified		
Solvent, Reactivity, Storage, and Stability		NR; NR; NR; NR		
Radiolabel, Source, State, and Purity		NR; NR; NR; NR Notes: NR		
Temperature		not specified		
System		not specified		
pH		not specified		
Results Details Method		not specified		
Standard Deviation Results		not specified		
Results Details		pKa1 = 7.5 pKa2 = 8.5		
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	Medium	The analytical method is non-standard but is expected to be appropriate OR 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: Secondary sources cited: WHO, 1995 (HERO ID 2206822); ECB, 2006 (HERO ID 1443911)

Study Citation:	Wildlife International Ltd, (2002). Determination of the dissociation constant of tetrabromobisphenol A.
OECD Harmonized Template:	pKa
HERO ID:	1443953

EXTRACTION	
Parameter	Data
pK _a	9.4 -
CASRN and Test Material	79-94-7; TBBPA (Tetrabromobisphenol A)
Confidentiality, Type, and Guideline	No; Experimental; OECD Guideline 112
Solvent, Reactivity, Storage, and Stability	water/methanol for stock solution and calibrations; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Composite sample consisting of test substance from Albemarle Corporation, Great Lakes Chemical Corporation, Bromine Compounds Ltd. (Lot/Batch 25938C-1, 008JG21C and 000135, respectively); white powder; 98.91%
Temperature	not specified
System	Dissociated and undissociated TBBPA were determined by HPLC with UV detection. Test solutions with a nominal concentration of 50 pg/L were prepared at pH values from 6.0 to 12.0, in 0.5-unit intervals. Dissociation constants were calculated for samples with measured concentrations >20% and <80% nominal concentration range 6.0-12.0 at pH 0.5 intervals
pH	HPLC/UV; LOQ 20.0 µg/L
Results Details Method	0.0849 (reported in table 6)
Standard Deviation Results	mean pK _a = 9.4; K _a = 3.98E-10 (from 2 samples at pH 9.5 and 10.0)
Results Details	

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)	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:	CPSC, (2015). Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)..
OECD Harmonized Template:	Henry's Law
HERO ID:	4824921

EXTRACTION	
Parameter	Data
Henry's Law	7.05E-11 - atm-m3 /mole
CASRN and Test Material	79-94-7; TBBPA
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 C
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 non-standard but is expected to be appropriate OR 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: The source cites one of three references ChemID Plus. 2014. Tetrabromobisphenol A, TBBPA. CASRN: 79-94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD. HSDB (Hazardous Substance Database). 2013c. Tetrabromobisphenol A, TBBPA. CASRN: 79- 94-7. A TOXNET database. U.S. National Library of Medicine. Bethesda, MD.ECHA (European Chemicals Agency), 2008. Diantimony Trioxide, Summary Risk Assessment Report- Final Report. European Chemicals Agency, Sundbyberg, Sweden.

Study Citation:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.
OECD Harmonized Template:	Henry's Law
HERO ID:	8775306

EXTRACTION	
Parameter	Data
Henry's Law	2.31E-13 - atm m ³ /mol
CASRN and Test Material	79-94-7; TBBPA
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
Temperature	25 C
pH	NR
System	NR
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	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 (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 non-standard but is expected to be appropriate OR 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	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

* Related References: Cites EPI Suite and secondary source EFSA, Scientific opinion on tetrabromobisphenol A (TBBPA) and its derivatives in food, EFSA J. 9 (2011) 2477. (HEROID 6586392).

Study Citation:	Kuramochi, H., Kawamoto, K., Miyazaki, K., Nagahama, K., Maeda, K., Li, X. W., Shibata, E., Nakamura, T., Sakai, S. (2008). Determination of physicochemical properties of tetrabromobisphenol A. Environmental Toxicology and Chemistry 27(12):2413-2418.
OECD Harmonized Template:	Henry's Law
HERO ID:	5496178

EXTRACTION	
Parameter	Data
Henry's Law	1.45E-10 atm-m3/mol
CASRN and Test Material	79-94-7; Tetrabromobisphenol A
Confidentiality, Type, and Guideline	None; Calculation; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	No; Sigma-Aldrich (Milwaukee, WI); Solid; 97%
Temperature	298 K
pH	Not reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Reported as 1.47E-5 Pa-m3/mol
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	Medium	Calculated data 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 out outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate.
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:	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).
OECD Harmonized Template:	Henry's Law
HERO ID:	5160132

EXTRACTION	
Parameter	Data
Henry's Law	7.0E-11 - atm m3/mol
CASRN and Test Material	79-94-7; TBBPA
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
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 (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 non-standard but is expected to be appropriate OR 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.

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Study Citation:	National Toxicology Program (NTP), (2014). NTP technical report on the toxicology studies of tetrabromobisphenol A (CAS no. 79-94-7) in F344/NTac rats and B6c3f1/N mice and toxicology and carcinogenesis studies of tetrabromobisphenol A in Wistar Han [CrI:WI(Han)] rats and B6C3F1/N mice (gavage studies).
OECD Harmonized Template:	Henry's Law
HERO ID:	5160132

		EVALUATION	
Domain	Metric	Rating	Comments
Overall Quality Determination		High	

* Related References: Cited from Hakk, H., and Letcher, R.J. (2003). Metabolism in the toxicokinetics and fate of brominated flame retardants—a review. Environ. Int. 29, 801-828. (HERO ID 1003351)McCormick, J.M., Paiva, M.S., Häggblom, M.M.,Cooper, K.R., and White, L.A. (2010). Embryonicexposure to tetrabromobisphenol A and its metabolites, bisphenol A and tetrabromobisphenol A dimethyl etherdisrupts normal zebrafish (Danio rerio) development and matrix metalloproteinase expression. Aquat. Toxicol. 100, 255-262. (HERO ID 1294687)

Study Citation:	O'Neil, M. J. (2013). Tetrabromobisphenol A. :1702-1703.
OECD Harmonized Template:	UV and Visible Absorption
HERO ID:	5348102

EXTRACTION	
Parameter	Data
CASRN and Test Material	Not Reported; Not Reported
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
Wave Length Range	not specified - not specified
Light Source, Optical Path Length, and Optical Cell Type	not specified; not specified; not specified
Test Concentration and Reference Substance	not specified - not specified ; not specified
Solvent and Solvent pH	uv max (water); not specified
Blank Control, Maxima, Lambda Max, and Peak Band Width	Not Reported; not specified; 310; not specified nm
Measured Absolute Value and Molar Coefficient	not specified; ϵ 9170
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 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**

Study Citation:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.
OECD Harmonized Template:	Other Properties
HERO ID:	8775306

EXTRACTION	
Parameter	Data
CASRN and Test Material	79-94-7; TBBPA
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 Value	Log Kaw = -11.025
Results Details	at 25 C
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	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 non-standard but is expected to be appropriate OR 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	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

* Related References: Cites EPI Suite and secondary source EFSA, Scientific opinion on tetrabromobisphenol A (TBBPA) and its derivatives in food, EFSA J. 9 (2011) 2477. (HEROID 6586392).

Study Citation:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.			
OECD Harmonized Template:	Other Properties			
HERO ID:	8775306			
EXTRACTION				
Parameter	Data			
CASRN and Test Material	79-94-7; TBBPA			
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 Value	Log Koa = 18.225			
Results Details	at 25 C			
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	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 non-standard but is expected to be appropriate OR 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	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		

* Related References: Cites EPI Suite and secondary source EFSA, Scientific opinion on tetrabromobisphenol A (TBBPA) and its derivatives in food, EFSA J. 9 (2011) 2477. (HERO ID 6586392).

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
K _{oa}	Octanol-Air partition coefficient
K _{ow}	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
pK _a	Negative base 10 Log of Acid Dissociation Constant (K _a)
RIVM	National Institute for Public Health and the Environment (Dutch: Rijksinstituut voor Volksgezondheid en Milieu)

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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