## Risk Evaluation for Tris(2-chloroethyl) Phosphate (TCEP)

#### **Systematic Review Supplemental File:**

Data Quality Evaluation and Data Extraction Information for Physical and Chemical Properties

**CASRN: 115-96-8** 

This supplemental file contains information regarding the data extraction and evaluation results for data sources that were considered for the *Risk Evaluation for Tris(2-chloroethyl) phosphate (TCEP)* 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 the *Risk Evaluation for Tris(2-chloroethyl) phosphate (TCEP) – Systematic Review Protocol.* EPA conducted data extractions and data quality evaluations based on author-reported descriptions and results; additional analyses (*e.g.*, statistical analyses) potentially conducted by EPA are not contained in this supplemental file. Additionally, the overall quality determination (OQD) for each reference represents the data as a whole for each study, and not for individual metric domains within a study.

HERO ID	Reference	Page
Physical Form or State		
3981013	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.	8
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.	9
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	10
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.	11
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	12
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	13
<b>Melting Point</b>		
3981013	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.	15
5160070	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).	16
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.	17
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	18
9641572	OECD, (2012). SIDS initial assessment profiles agreed in the course of the OECD HPV chemicals programme from 1993 to 2011.	19
5926273	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.	20
5332876	Toscano, W. A., Coleman, K. P. (2012). Esters of carbonic and orthocarbonic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols, and organic silicon. :353-424.	22
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.	23
5113326	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.	24
5926157	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8	28
<b>Boiling Point</b>		
3981013	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.	30
5160070	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).	31
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.	32
5349311	Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542.	33
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	34
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	35
5926273	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.	36

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4663142	Salthammer, T., Fuhrmann, F., Uhde, E. (2003). Flame retardants and halogenated degradation products) from polyurethane. Indoor	in the indoor environment – Part II: release of VOCs (triethylphosphate Air 13(1):49-52.	37
5332876	Toscano, W. A., Coleman, K. P. (2012). Esters of carbonic and acids, haloalcohols, and organic silicon. :353-424.	orthocarbonic acid, organic phosphorous, monocarboxylic halogenated	38
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulat Retardants.	ion and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame	39
5113326	U.S. EPA, (2015). Flame retardants used in flexible polyurethane f	oam: An alternatives assessment update.	40
5926157	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chle	proethyl) phosphate. 115-96-8	45
Density			
3981013	DOE, (2016). Table 1: Chemicals of concern and associated chem	cal information. PACs.	46
5160070	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-c	hloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).	47
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chlor	oethyl) phosphate, TCEP. :213.	48
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and	tris(2-chloroethyl) phosphate.	49
5332876	Toscano, W. A., Coleman, K. P. (2012). Esters of carbonic and acids, haloalcohols, and organic silicon. :353-424.	orthocarbonic acid, organic phosphorous, monocarboxylic halogenated	50
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulat Retardants.	ion and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame	51
5926432	Elsevier, (2019). Reaxys: physical-chemical property data for Tris	(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8	52
5349311	Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542.		53
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-o	hloroethyl) phosphate, 115-96-8.	54
6629833	NCBI, (2020). PubChem database: Compound summary: Tris(2-c	nloroethyl) phosphate.	55
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2705112	Brommer, S., Jantunen, L. M., Bidleman, T. F., Harrad, S., Diamor esters. Journal of Chemical and Engineering Data 59(5):1441-144	nd, M. L. (2014). Determination of vapor pressures for organophosphate 7.	56
5186315	Dobry, A., Keller, R. (1957). Vapor pressures of some phosphate an	d phosphonate esters. Journal of Physical Chemistry 61(10):1448-1449.	57
5160070	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-c	hloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).	58
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chlor	oethyl) phosphate, TCEP. :213.	59
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and	tris(2-chloroethyl) phosphate.	61
6629833	NCBI, (2020). PubChem database: Compound summary: Tris(2-c	aloroethyl) phosphate.	62
10225164	NIST, (2021). NIST Chemistry WebBook. Standard Reference Da	abase No. 69. Tri(2-chloroethyl) phosphate (115-96-8).	64
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-o	hloroethyl) phosphate, 115-96-8.	65
9641572	OECD (2012) SIDS initial assessment profiles agreed in the cour	se of the OECD HPV chemicals programme from 1903 to 2011	66

6967359	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.	67
5332876	Toscano, W. A., Coleman, K. P. (2012). Esters of carbonic and orthocarbonic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols, and organic silicon. :353-424.	68
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.	69
5113326	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.	70
5926157	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8	74
5349334	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate esters, with possible application as flame retardant.	75
10064224	Yaman, B., Dumanoglu, Y., Odabasi, M. (2020). Measurement and modeling the phase partitioning of organophosphate esters using their temperature-dependent octanol–air partition coefficients and vapor pressures. Environmental Science & Technology 54(13):8133–8143.	79
logKow		
5160070	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).	80
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.	81
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.	82
5926432	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8	83
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	84
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	85
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.	87
5113326	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.	88
5926157	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8	92
5349334	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate esters, with possible application as flame retardant.	93
Water Solubility		
5160070	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).	99
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79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	101
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	102
4565574	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.	104
5113326	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.	105
5926157	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8	109

5349334	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several	110
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3809216	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.	116
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	117
6629833	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.	118
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	120
5926273	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.	122
5332876	Toscano, W. A., Coleman, K. P. (2012). Esters of carbonic and orthocarbonic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols, and organic silicon. :353-424.	123
5113326	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.	124
Autoflammability		
3809216	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.	128
6629833	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.	129
рКа		
Viscosity		
5926432	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8	131
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	132
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	133
Refractive Index		
5926432	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8	134
5349311	Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542.	135
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	136
5926126	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.	137
5926273	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.	138
Henry's Law		
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.	139
79051	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.	140

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

534	9334	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate esters, with possible application as flame retardant.	141
	Nanomaterial Zeta		
	Dielectric Constant		
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	Other Properties		
877	5306	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.	144
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516	5658	Okeme, J. O. (2018). Examining the gas-particle partitioning of organophosphate esters: How reliable are air measurements?. Environmental Science & Technology 52(23):13834-13844.	146
696	7359	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.	147
100	64224	Yaman, B., Dumanoglu, Y., Odabasi, M. (2020). Measurement and modeling the phase partitioning of organophosphate esters using their temperature-dependent octanol–air partition coefficients and vapor pressures. Environmental Science & Technology 54(13):8133–8143.	148

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Study Citation: OECD Harmonized	DOE, (2016). T Physical Form of	Table 1: Chemicals of concern and associator State	ted chemical inf	formation. PACs.
Template: HERO ID:	3981013			
			EXTRACTIO	N
Parameter		Data		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	none; not specified; not specified		
Solvent, Reactivity, Storage	, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	nd Purity	NR; NR; NR; NR Notes: NR		
Results Value		liquid		
Results Details		not specified		
			EVALUATIO	N
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 Reliabili	ty			
	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; specific source not reported.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: primary reference not specified but include CRC (2009), HSDB (no date), Merck (2006), SAX (2012)

**Study Citation: OECD Harmonized**  ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.

Physical Form or State

Template:

**HERO ID:** 3809216

T3877031	n .		10	T. T
EXT	KΑ	C I	1()	IN .

Parameter Data CASRN and Test Material 115-96-8; Tris(2-chloroethyl) phosphate Confidentiality, Type, and Guideline None; experimental; None Solvent, Reactivity, Storage, and Stability NR; NR; NR; NR Radiolabel, Source, State, and Purity NR; NR; Liquid; NR Notes: NR Results Value Liquid Results Details at 20 deg C

			<b>EVALUATIO</b>	N
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 Reliab	oility			
	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 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

<b>Study Citation:</b>
OECD Harmonized

IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.

Physical Form or State

Template:

HERO ID: 79051

EXTRACTION
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	EXTRACTION
Parameter	Data
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	no; not specified; NA
Solvent, Reactivity, Storage, and Stability	NA; NA; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA Notes: NA
Results Value	colorless to pale yellow liquid
Results Details	Not Reported

			EVALUATIO	N
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 Relia	bility			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qua	lity Determi	ination	Low	

Domain 2: Test Reliability

Domain 3: Other

Metric 3:

Metric 4:

Reliability/Unbiased

(Method Objectivity)

Reliability/Analytical Method

**Study Citation:** 

U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.

OECD Harmonized	Physical Form or State						
Template: HERO ID:	4565574						
			EXTRACTIO	ON .			
Parameter		Data					
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phos	sphate				
Confidentiality, Type, and	Guideline	Not Reported; Not Reported; Not	•				
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR					
Radiolabel, Source, State,	and Purity	None; NR; liquid; NR Notes: slight odor					
Results Value		liquid					
Results Details		Not Reported					
			EVALUATIO	N			
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.			

# 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. Werall Quality Determination High

N/A

N/A

Rating of this factor is not applicable to this kind of information.

Rating of this factor is not applicable to this kind of information.

Study Citation: OECD Harmonized	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.  Physical Form or State					
Template: HERO ID:	5926126					
		E	XTRACTIO	N		
Parameter		Data				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported				
Solvent, Reactivity, Storage		NR; NR; NR; NR				
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR				
Results Value	·	liquid				
Results Details		Not Reported				
			CVALUATIO	N		
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 Reliabil	itv					
	Metric 3:	Reliability/Unbiased	N/A	Rating of this factor is not applicable to this kind of information.		
		(Method Objectivity)				
	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.		

<sup>\*</sup> Related References: Lewis, R.J. Sr. 2007. Hawley's Condensed Chemical Dictionary 15th Edition. John Wiley & Sons, Inc. New York, NY. P. 1288.

Study Citation: OECD Harmonized	NLM, (2015). I Physical Form	PubChem: Hazardous substance data bank: or State	Tris(2-chloroe	ethyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
Results Details		clear, transparent liquid		
			EVALUATIO	N
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 Reliabil	ity			
	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.
<b>Overall Qualit</b>	ty Determi	nation	High	

<sup>\*</sup> Related References: Lewis, R.J. Sr. 2007. Hawley's Condensed Chemical Dictionary 15th Edition. John Wiley & Sons, Inc. New York, NY. P. 1288.

Study Citation:
<b>OECD Harmonized</b>

NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.

OECD Harmonized Template:

Physical Form or State

HERO ID:

5926126

FYTD	CTION
LAIN	

Parameter	Data	
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate	
Confidentiality, Type, and Guideline	None; Experimental; Not reported	
Solvent, Reactivity, Storage, and Stability	NR; NR; NR	
Radiolabel, Source, State, and Purity	NR; NR; NR	
Results Details	low odor	

			EVALUATIO	N
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 Reliabi	ility			
	Metric 3:	Reliability/Unbiased	N/A	Rating of this factor is not applicable to this kind of information.
		(Method Objectivity)		
	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 Quali	ity Determ	ination	High	

<sup>\*</sup> Related References: Weil, E.D. 2001. Flame retardants, phosphorus. Kirk-Othmer Encyclopedia of Chemical Technology. New York, NY: John Wiley and Sons, Inc.

Study Citation: OECD Harmonized	DOE, (2016). T Melting Point	Table 1: Chemicals of concern and associate	ed chemical inf	formation. PACs.
Template: HERO ID:	3981013			
		]	EXTRACTIO	N
Parameter		Data		
Melting Point		-55 - °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; none		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR Notes: NR		
Results Details Methods		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	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; specific source not reported.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

<sup>\*</sup> Related References: primary reference not specified but include CRC (2009), HSDB (no date), Merck (2006), SAX (2012)

Study Citation: OECD Harmonized	EC, (2009). Scr Melting Point	reening Assessment for the Challenge: Etha	nol, 2-chloro-,	phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
Template: HERO ID:	5160070			
HERO ID.	3100070		EVED A CETO	NI
Parameter		Data	EXTRACTIO	IN .
Melting Point		-5560 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	nd Purity	NR; NR; NR; NR Notes: NR		
Results Details Methods		NR		
Standard Deviation Results		NR		
Results Details		Not Reported		
		]	EVALUATIO	N .
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 Reliabili	ity			
	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				
Commin of Curc	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 Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation: OECD Harmonized	ECB, (2009). En Melting Point	uropean Union risk assessment report: Tris	(2-chloroethyl)	phosphate, TCEP. :213.
Template: HERO ID:	3809216			
		]	EXTRACTIO	N
Parameter		Data		
Melting Point		< -70 - °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	No; Experimental; not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR		
Results Details Methods		Not reported		
Standard Deviation Results		Not reported		
Results Details		Not reported		
			EVALUATIO	N
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 Reliabil	ity			
	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 Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: Primary source Akzo Nobel 2000.

Study Citation: OECD Harmonized	NLM, (2015). F Melting Point	PubChem: Hazardous substance data bank:	Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5026126			
неко ір:	5926126			
_			EXTRACTIO	N
Parameter		Data		
Melting Point		-55 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
Results Details Methods		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	ity			
	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 Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: Toscano, W.A., Coleman, K.P. 2012. Esters of Carbonic and Orthocarbonic Acid, Organic Phosphorous, Monocarboxylic Halogenated Acids, Haloalcohols, and Organic Silicon. Patty's Toxicology. 6th Ed. New York, NY: John Wiley & Sons, Inc.

Study Citation: OECD Harmonized	OECD, (2012). SIDS initial assessment profiles agreed in the course of the OECD HPV chemicals programme from 1993 to 2011. Melting Point				
Template: HERO ID:	9641572				
			EXTRACTION		
Parameter		Data			
Melting Point		< -70 °C			
CASRN and Test Material		115-96-8; tris(2-chloroethylphosphate)			
Confidentiality, Type, and C	Guideline	None; Experimental; NR			
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR			
Results Details Methods		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 Reliabil	ity				
	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 Qualit	ty Determi	nation	Medium		

<sup>\*</sup> Related References: No citation reported.

Study Citation: OECD Harmonized	RSC, (2019). C Melting Point	ChemSpider: Tris(2-chloroethyl) phosphate.		
Template: HERO ID:	5926273			
			EXTRACTION	
Parameter		Data		
Melting Point		-51 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
Results Details Methods		Not Reported		
Standard Deviation Results	3	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 Reliabil	ity			
	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 Qualit	ty Determi	nation	Medium	

<sup>\*</sup> Related References: LabNetwork

Study Citation: OECD Harmonized	RSC, (2019). C Melting Point	ChemSpider: Tris(2-chloroethyl) phosphate	2.	
Template:	_			
HERO ID:	5926273			
		_	EXTRACTION	
Parameter		Data		
Melting Point		-51 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Results Details Methods		Not Reported		
Standard Deviation Results	s	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 Reliabil	lity			
	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 Quali	ty Datarmi	ingtion	Medium	
Over all Quali	ty Determin	เมลนบม	Michilli	

 $<sup>^\</sup>star$  Related References: Parchem-fine & specialty chemicals

Study Citation:			and orthocarbo	onic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols,
OECD Harmonized	and organic sili Melting Point	con. :353-424.		
Template:	Wicking Form			
HERO ID:	5332876			
			EXTRACTIO	N
Parameter		Data		
Melting Point		= -55 - °C		
CASRN and Test Material		115-98-6; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; not specified; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR; NR		
Radiolabel, Source, State, a		NR; NR; NR Notes: NR		
Results Details Methods		Not reported		
Standard Deviation Results	S	Not reported		
Results Details		Melting point = $-55^{\circ}$ C		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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	The information is from a data collection prepared by experts in the field.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	ty Determi	nation	High	

Study Citation: OECD Harmonized	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants. Melting Point				
Template:					
HERO ID:	4565574				
			EXTRACTIO	N	
Parameter		Data			
Melting Point		-55 °C			
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate	e		
Confidentiality, Type, and C	Guideline	none; Not Reported; Not Reported			
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, a	and Purity	None; NR; NR; NR			
Results Details Methods		Not Reported			
Standard Deviation Results		Not Reported			
Results Details		Not Reported			
			EVALUATIO	N .	
Domain		Metric	Rating	Comments	
Domain 1: Substance					
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.	
	Metric 2:	Appropriateness	High	Rating of this factor is not applicable to this kind of information.	
Domain 2: Test Reliabil	itv				
20114111 21 1000 110114011	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased	
	Matria 4.	(Method Objectivity)	M - 4:	towards a particular product or outcome.	
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.	
Domain 3: Other					
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.	
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.	
Overall Qualit	ty Determi	nation	High		

Study Citation: OECD Harmonized	U.S. EPA, (2015) Melting Point	). Flame retardants used in flexible polyu	urethane foam: A	An alternatives assessment update.
Template: HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		
Melting Point		= -58 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; Experimental; method DIN 51583,	ASTM D 97-66	
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR Notes: NR		
Results Details Methods		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	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	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.

<sup>\*</sup> Related References: Source cited: OECD-SIDS, 2006

U.S. EPA, (2013) Melting Point	5). Flame retardants used in flexible poly	yurethane foam: A	An alternatives assessment update.
5113326			
		EXTRACTIO	N
	Data		
	< -70 °C		
		e	
Guideline			
	NR; NR; NR		
and Purity	NR; NR; NR; NR Notes: NR		
	not reported		
	not reported		
	not reported		
		EVALUATIO	N
	Metric	Rating	Comments
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.
ity			
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.
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.
y Determi	nation	High	
	Melting Point 5113326  Guideline c, and Stability nd Purity  Metric 1: Metric 2:  ity Metric 3: Metric 4:  Metric 5: Metric 5:	Data  -70 °C -70 °C -115-96-8; Tris(2-chloroethyl) phosphate none; Experimental; not reported; pour NR; NR; NR; NR NR Notes: NR not reported not reported not reported not reported  Metric  Metric 1: Representativeness Metric 2: Appropriateness  Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Metric 5: Databases	Data  C-70 °C 115-96-8; Tris(2-chloroethyl) phosphate none; Experimental; not reported; pour point NR; NR; NR; NR NR; NR; NR NR not reported not reported not reported not reported Netric  Representativeness High Metric 2: Appropriateness High Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method Medium  Metric 5: Databases High Metric 6: Models N/A

<sup>\*</sup> Related References: Cited sources - NICNAS, 2001; OECD-SIDS, 2006; EU, 2009

Study Citation: OECD Harmonized	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.  Melting Point			
Template:				
HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		
Melting Point		= -55 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; Experimental; not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR Notes: NR		
Results Details Methods		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Sources cited: IARC, 1990; EC, 2000; ATSDR, 2012

Study Citation: OECD Harmonized Template:	U.S. EPA, (2015) Melting Point	5). Flame retardants used in flexible polyu	rethane foam: A	An alternatives assessment update.
HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		
Melting Point		ca60 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; Experimental; not reported		
Solvent, Reactivity, Storag	e, 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	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Determi	nation	High	

<sup>\*</sup> Related References: Cited source - EC (2000) IUCLID dataset

Study Citation: OECD Harmonized	U.S. EPA, (201 Melting Point	9). Chemistry dashboard information for tr	is(2-chloroethy	d) phosphate. 115-96-8		
Template:						
HERO ID:	5926157					
			EXTRACTIO	N		
Parameter		Data				
Melting Point		-35 °C				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and C	Guideline	None; Experimental; Not Reported				
Solvent, Reactivity, Storage		NR; NR; NR				
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR				
Results Details Methods	-	Not Reported				
Standard Deviation Results		Not Reported				
Results Details		Not Reported				
			EVALUATIO	N		
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 Reliabil	ity					
	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	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 Qualit	ty Determi	nation	High			

<sup>\*</sup> Related References: PhysProp

Study Citation: OECD Harmonized	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8  zed Melting Point			
Template:	5026157			
HERO ID:	5926157			
			EXTRACTION	
Parameter		Data		
Melting Point		-55 °C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Results Details Methods		Not Reported		
Standard Deviation Results	S	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 Reliabil	lity			
	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 Quali	ty Determi	nation	Medium	

<sup>\*</sup> Related References: Jean-Claude Bradley Open Melting Point Dataset

Study Citation: OECD Harmonized	DOE, (2016). T Boiling Point	able 1: Chemicals of concern and associate	ed chemical inf	formation. PACs.
Template: HERO ID:	3981013			
		1	EXTRACTIO	N
Parameter		Data		
Boiling Point		330 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; not specified		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	•	NR; NR; NR Notes: NR		
Standard Deviation Results	3	not reported		
Results Details		@ 760 mm Hg		
			EVALUATIO	N
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 Reliabil	ity			
	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; specific source not reported.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

<sup>\*</sup> Related References: primary reference not specified but include CRC (2009), HSDB (no date), Merck (2006), SAX (2012)

Study Citation: OECD Harmonized	EC, (2009). Scr Boiling Point	reening Assessment for the Challenge: Eth	anol, 2-chloro-,	phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
Template: HERO ID:	5160070			
			EXTRACTIO	N
Parameter		Data		
Boiling Point		145 - 202 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR; NR		
Radiolabel, Source, State, a	-	NR; NR; NR; NR Notes: NR		
Standard Deviation Results	3	NR		
Results Details		66 - 1333 Pa		
			EVALUATIO	N
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 Reliabil	itv			
	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	

<sup>\*</sup> Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation: OECD Harmonized	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.  Boiling Point				
Template: HERO ID:	3809216				
			EXTRACTIO	N	
Parameter		Data			
Boiling Point		320 - C			
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate			
Confidentiality, Type, and Guideline		None; Experimental; not reported			
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, and Purity		NR; NR; NR Notes: NR			
Standard Deviation Result	s	not reported			
Results Details		Decomposition temperature at 1013 hPa.			
			EVALUATIO	N	
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 Reliabi	lity				
	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 Quali			N/A <b>High</b>	e	

<sup>\*</sup> Related References: Primary source Akzo Nobel 2000

Study Citation:
OECD Harmonized

Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542. Boiling Point

Template:

Domain 3: Other

Metric 5:

**HERO ID:** 5349311

EXTRACTION					
Parameter	Data				
Boiling Point	330 C				
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and Guideline	None; Experimental; Not Reported				
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR				
Radiolabel, Source, State, and Purity	NR; NR; NR; NR				
Standard Deviation Results	Not Reported				
Results Details	Not Reported				
		EVALUATIO	N		
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 inclu-		

High

sion in a peer-reviewed/recognized database or other secondary source.

Data is from a peer-reviewed data collection.

Metric	e 6: Models	N/A Rating of this factor is not applicable to this kind of informat	ion.
Overall Quality De	termination	High	

Databases

Study Citation: OECD Harmonized IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate. Boiling Point

Template:

**HERO ID:** 79051

EXTRACTION	EXTR	ACTI	ON
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Parameter	Data
Boiling Point	351 C
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; NA
Solvent, Reactivity, Storage, and Stability	NA; NA; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA Notes: NA
Standard Deviation Results	Not Reported
Results Details	at 760 mm Hg

			<b>EVALUATIO</b>	N
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 Reliabi	ility			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Study Citation: OECD Harmonized	NLM, (2015). Po	ubChem: Hazardous substance data bank	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template:	C			
HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data		
Boiling Point		330 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and Guideline		None; Experimental; Not Reported		
Solvent, Reactivity, Storage, and Stability		NR; NR; NR; NR		
Radiolabel, Source, State, a	•	NR; NR; NR; NR		
Standard Deviation Results	<b>3</b>	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
Domain		Metric	Rating	Comments
Domain 1: Substance			8	
	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 Reliabil	ity			
Bomain 2. Test Rendon	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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				
20mm of outer	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 Qualit	ty Determir	nation	High	

<sup>\*</sup> Related References: Haynes, W.M. (Ed.) CRC Handbook of Chemistry and Physics. 95th Edition. CRC Press LLC, Boca Raton. P. 3-542.

Study Citation: OECD Harmonized	RSC, (2019). Cl Boiling Point	nemSpider: Tris(2-chloroethyl) phosphate	2.	
Template: HERO ID:	5926273			
пекотр:	3920273			
Parameter		Data	EXTRACTION	
Boiling Point		192 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Standard Deviation Result	s	Not Reported		
Results Details		at 10 torr		
			EVALUATION	
Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliabi	lity			
	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.

<sup>\*</sup> Related References: Parchem-fine & specialty chemicals

**Overall Quality Determination** 

Study Citation:				r environment – Part II: release of VOCs (triethylphosphate and halogenated			
OECD Harmonized	degradation pro Boiling Point	ducts) from polyurethane. Indoor Air 13(1	):49-52.				
Template: HERO ID:	4663142						
			EXTRACTION				
Parameter		Data					
Boiling Point		351 C					
CASRN and Test Material	1	not reported; Tris(2-chloroethyl) phosphate	e				
Confidentiality, Type, and		none; not specified; not specified					
Solvent, Reactivity, Storag		NR; NR; NR; NR					
Radiolabel, Source, State,	•	NR; Sigma-Aldrich, Deisenhofen, Germar	ny; NR; GC quality No	otes: NR			
Standard Deviation Result Results Details	ts	not reported not reported	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 Reliabi	ility						
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased			
		(Method Objectivity)	_	towards a particular product or outcome.			
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.			
Domain 3: Other							
	Metric 5:	Databases	Low	The data are from an unknown source.			
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.			

Medium

**Overall Quality Determination** 

Study Citation:	Toscano, W. A. and organic sili		and orthocarbo	onic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols,
OECD Harmonized	Boiling Point			
Template:				
HERO ID:	5332876			
		I	EXTRACTIO	N
Parameter		Data		
Boiling Point		= 330 - C		
CASRN and Test Material		115-98-6; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; not specified; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a	-	NR; NR; NR Notes: NR		
Standard Deviation Results	-	Not reported		
Results Details		Boiling point = 330°C		
			EVALUATIO	N
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 Reliabil	itv			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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 inclu-
				sion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information is from a data collection prepared by experts in the field.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

High

Domain 3: Other

Study Citation: OECD Harmonized Template:	U.S. EPA, (2015) Boiling Point	5). TSCA Work Plan Chemical Problem	Formulation and	Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
HERO ID:	4565574			
			EXTRACTIO	N
Parameter		Data		
Boiling Point		> 200 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; not specified; Not Reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; decomposition noted		
Radiolabel, Source, State,	and Purity	None; NR; liquid; NR		
Standard Deviation Results	S	Not Reported		
Results Details		Stability of C-Cl bond loss HCl begins 2	00° C	
			EVALUATIO	N
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 however, a cutoff value was reported and pressure information would be useful for data interpretation.
Domain 2: Test Reliabil	lity			
	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.

## Overall Quality Determination High

Databases

Models

Metric 5:

Metric 6:

High

N/A

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.

Rating of this factor is not applicable to this kind of information.

Study Citation: OECD Harmonized	U.S. EPA, (2015 Boiling Point	5). Flame retardants used in flexible polyur	ethane foam: A	An alternatives assessment update.
Template: HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		•
Boiling Point		202 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State,	•	NR; NR; NR; NR Notes: NR		
Standard Deviation Results	•	Not reported		
Results Details		at 10 mmHg Measured by ASTM D1160 n	nethod at a reduc	ed pressure
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	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	ty Determi	nation	High	

<sup>\*</sup> Related References: Cited sources - EC, 2000

Study Citation: OECD Harmonized	U.S. EPA, (2015 Boiling Point	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. Boiling Point				
Template: HERO ID:	5112226					
HERO ID:	5113326					
D 4			EXTRACTIO	N		
Parameter		Data				
Boiling Point		= 330 - C				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and C		None; Experimental; not reported				
Solvent, Reactivity, Storage		NR; NR; NR; NR				
Radiolabel, Source, State, a	•	NR; NR; NR Notes: NR				
Standard Deviation Results	3	Not reported				
Results Details		not reported				
			EXAT HATEO	<b>X</b> 7		
ъ.			EVALUATIO:			
Domain		Metric	Rating	Comments		
Domain 1: Substance	M 1	D	TT: 1			
	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 Reliabil	ity					
	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.		
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.		
Overall Qualit	ty Determii	nation	High			

<sup>\*</sup> Related References: Cited sources - IARC, 1990; Lide, 2008; ATSDR, 2012

Study Citation: OECD Harmonized	U.S. EPA, (201 Boiling Point	5). Flame retardants used in flexible polyure	thane foam: A	an alternatives assessment update.
Template:	Boiling Foilit			
HERO ID:	5113326			
		F	XTRACTIO	N
Parameter		Data	ATRACTIO	
Boiling Point		= 320 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; not reported		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; 99.5% Notes: NR		
Standard Deviation Results	S	Not reported		
Results Details		decomposes		
			EVALUATIO	N .
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 Reliabil	lity			
	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.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	tv Determi	nation	High	

<sup>\*</sup> Related References: Cited source - EU (2009)

OECD Harmonized Template:	Boiling Point			
HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		
Boiling Point		= 145 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; not reported		
Solvent, Reactivity, Storage		NR: NR: NR		
Radiolabel, Source, State, a		NR; NR; NR Notes: NR		
Standard Deviation Results	•	Not reported		
Results Details		at 0 mmHg; Value reported as 145°C at 0	0.66 hPa	
			EVALUATIO	N
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 Reliabil	itsz			
Domain 2. Test Kenaon	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	MICHIC J.	(Method Objectivity)	MCGIGIII	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				
Domain J. Onioi	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

<sup>\*</sup> Related References: Cited sources - EC, 2000; NICNAS, 2001

Template:	5112226			
HERO ID:	5113326			
Damana 44		Data	EXTRACTIO	N .
Parameter		Data		
Boiling Point		>= 220 - C		
CASRN and Test Materia	l	115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; not reported		
Solvent, Reactivity, Storag	ge, and Stability	NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Standard Deviation Result	is	Not reported		
Results Details		Rapid decomposition occurs above 22 dichloroethane.	0°C. Thermal dec	omposition products are carbon monoxide, hydrogen chloride, 2-chloroethane and
			EVALUATIO	N
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 Reliabi	lity			
	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				
Domain J. 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.

<sup>\*</sup> Related References: Cited sources - IPCS, 1998

Template:	5026157			
HERO ID:	5926157			
<b>.</b>			EXTRACTIO	N
Parameter		Data		
Boiling Point		330 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storag		NR; NR; NR; NR		
Radiolabel, Source, State,		NR; NR; NR; NR		
Standard Deviation Results	s	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
	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.

<sup>\*</sup> Related References: PhysProp

Study Citation: OECD Harmonized	DOE, (2016). T Density	Table 1: Chemicals of concern and associa	ated chemical inf	formation. PACs.		
Template:	Delisity					
HERO ID:	3981013					
EXTRACTION						
Parameter		Data				
Density		1.39 -				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and		none; not specified; not specified				
Solvent, Reactivity, Storag		NR; NR; NR				
Radiolabel, Source, State,	-	NR; NR; NR Notes: NR				
Density Type		specific gravity (density of a substance d	ivided by the densi	ity of water)		
System		not specified		<b>3</b> · ······		
Temperature		25°C				
Standard Deviation Results	s	not reported				
Results Details		not reported				
			EVALUATIO			
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 Reliabil	lity					
	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; specific source not reported.		
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.		
Overall Quali	tv Dotormi	nation	High			
Over an Quan	ij Dittilli	nauvn	mgn			

<sup>\*</sup> Related References: primary reference not specified but include CRC (2009), HSDB (no date), Merck (2006), SAX (2012)

Study Citation: OECD Harmonized	EC, (2009). Sc Density	creening Assessment for the Challenge: Etha	anol, 2-chloro-,	phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
Template: HERO ID:	5160070			
пекотр:	3100070			
Damana a4an			EXTRACTIO	N
Parameter		Data		
Donaitre		1.420 alom2		
Density CASRN and Test Material		1.420 - g/cm3 115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		None; Experimental; NR		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,	•	NR; NR; NR; NR Notes: NR		
Density Type	and rurity	Density		
System		Not reported		
Temperature		20 - 25 deg C		
Standard Deviation Result	s	NR		
Results Details	~	Reported as 1420 kg/m3		
			EVALUATIO	N
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.
				<i>7</i>
Domain 2: Test Reliabi	-	5 6		
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	Matria 4:	(Method Objectivity) Reliability/Analytical Method	Modine	towards a particular product or outcome.
	Metric 4:	Renability/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				
Domain J. Omei	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are
	wieure 3.	Databases	Ingil	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.
0 110 11	. D.		TT. 1	
Overall Quali	ty Determi	ination	High	
	•			

<sup>\*</sup> Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation: OECD Harmonized	ECB, (2009). I Density	European Union risk assessment report: Tri	s(2-chloroethyl) phos	sphate, TCEP. :213.
Template: HERO ID:	3809216			
			EXTRACTION	
Parameter		Data		
Density		1.4193 - g/cm3		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; NR		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR Notes: NR		
Density Type		density		
System		Not reported		
Temperature		25 deg C		
Standard Deviation Results	S	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	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliabil	ity			
	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	ty Determ	ination	Medium	

 $<sup>^\</sup>star$  Related References: Primary Source: Akzo Nobel 2000

Study Citation: OECD Harmonized	IPCS, (1998). I Density	Flame retardants: Tris(chloropropyl) phosp	phate and tris(2-	chloroethyl) phosphate.
Template: HERO ID:	79051			
TIERO ID.	79031			A1
Parameter		Data	EXTRACTIO	N
1 at affecter		Data		
Density		1.425 not reported		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; Not Reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	None; NR; liquid; NR		
Density Type		specific gravity		
System		Not Reported		
Temperature		20°C		
Standard Deviation Results	S	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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				
Domain J. 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 Qualit	ty Determi	ination	Low	

Study Citation:		Toscano, W. A., Coleman, K. P. (2012). Esters of carbonic and orthocarbonic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols, and organic silicon. :353-424.				
OECD Harmonized	Density	con. :333-424.				
Template:	Delisity					
HERO ID:	5332876					
			EXTRACTIO	NI		
Parameter		Data	EATRACTIO	N		
Tarameter		Data				
Density		= 1.39 - not specified				
CASRN and Test Material		115-98-6; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and Guideline		none; not specified; Not reported				
Solvent, Reactivity, Storage		NR; NR; NR				
Radiolabel, Source, State,	-	NR; NR; NR Notes: NR				
Density Type	and rainty	density				
System		Not reported				
Temperature		not reported				
Standard Deviation Results		Not reported				
Results Details		Not reported				
			EVALUATIO	N		
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.		
D : 0 T (D 1: 1:1	··.					
Domain 2: Test Reliabil	Metric 3:	Daliabilitan/Hinbinand	M - 4:			
	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 inclu-		
	Wictire 4.	Renaomty/Marytear Wethod	Wiedium	sion in a peer-reviewed/recognized database or other secondary source.		
Domain 3: Other						
	Metric 5:	Databases	High	The information is from a data collection prepared by experts in the field.		
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.		
Overall Quality	ty Dotorm	instion	Цiah			
Overall Quali	iy Determi	เมลนบม	High			

Study Citation: OECD Harmonized	U.S. EPA, (201) Density	5). TSCA Work Plan Chemical Problem F	Formulation and	Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
Template:	20113109			
HERO ID:	4565574			
			EXTRACTIO	N
Parameter		Data		
Demokra		1.425 -/2		
Density CASRN and Test Material		1.425 g/cm3 115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guidalina	none; Not Reported; Not Reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a		None; NR; liquid; NR		
Density Type	and I unity	density		
System		Not Reported		
Temperature		25°C		
Standard Deviation Results	3	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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.
				1
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 Qualit	ty Determi	nation	High	

Study Citation: OECD Harmonized	Elsevier, (2019) Density	). Reaxys: physical-chemical property data	for Tris(2-chlo	proethyl) phosphate. CAS Registry Number: 115-96-8		
Template: HERO ID:	5926432					
		I	EXTRACTIO	N		
Parameter		Data				
Density		1.42 - 1.4289 g/cm3				
CASRN and Test Material	l	115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported				
Solvent, Reactivity, Storag	ge, and Stability	NR; NR; NR; NR				
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR				
Temperature		20-25°C				
Standard Deviation Result	S	Not Reported				
Results Details		20-25°C; 10 values were reported in Reaxys; 7 values were reported in the range of 1.42 to 1.4289 at 20-25°C; 3 values were outside this range or measured at unreported temperatures.				
			EVALUATIO	N		
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 Reliabi	lity					
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
	36.4	(Method Objectivity)	3.6 11	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.		

<sup>\*</sup> Related References: Data range determined from multiple primary sources in REAXYS.

Study Citation: OECD Harmonized	Haynes, W. M. Density	(2014). Tris(2-chloroethyl) phosphate. :3-	542.	
Template:	Demondy			
HERO ID:	5349311			
			EXTRACTIO	N
Parameter		Data		
Density		1.39 g/cm3		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storage		NR; NR; NR; NR		
Radiolabel, Source, State, a	•	NR; NR; NR; NR		
Temperature	•	25°C		
Standard Deviation Results	<b>S</b>	Not Reported		
Results Details		Not Reported		
			EXALITATE O	N.
Domain		Metric	EVALUATIO	Comments
Domain 1: Substance		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.
	Wictife 2.	Appropriatelless	IV/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliabil	ity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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 Qualit	ty Determi	nation	High	

5926126			
	The state of the s	EXTRACTIO	N
	Data		
	1 39 g/cm3		
	-		
ıideline			
	NR; NR; NR		
•	NR; NR; NR; NR		
,	25°C		
	Not Reported		
	Not Reported		
	I	EVALUATIO	N
	Metric	Rating	Comments
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.
y			
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.
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.
	Metric 2:  y Metric 3:  Metric 4:  Metric 5:  Metric 6:	1.39 g/cm3 115-96-8; Tris(2-chloroethyl) phosphate None; Experimental; Not Reported NR; NR; NR; NR NR; NR; NR NR; NR; NR 25°C Not Reported Not Reported Not Reported Not Reported  Metric 1: Representativeness Metric 2: Appropriateness  Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Metric 5: Databases	1.39 g/cm3 115-96-8; Tris(2-chloroethyl) phosphate None; Experimental; Not Reported and Stability NR; NR; NR; NR d Purity NR; NR; NR 25°C Not Reported Not Reported Not Reported Not Reported Not Reported  Metric 1: Representativeness High Metric 2: Appropriateness N/A   Metric 3: Reliability/Unbiased Medium (Method Objectivity) Metric 4: Reliability/Analytical Method Medium  Metric 5: Databases High Metric 5: Databases High Metric 6: Models  N/A

<sup>\*</sup> Related References: Haynes, W.M. (Ed.) CRC Handbook of Chemistry and Physics. 95th Edition. CRC Press LLC, Boca Raton. P. 3-542.

Study Citation:		PubChem database: Compound summary	: Tris(2-chloroet	hyl) phosphate.
OECD Harmonized Template:	Density			
HERO ID:	6629833			
			EXTRACTIO	N
Parameter		Data		
Density		9.8		
CASRN and Test Material		115-96-8; TCEP		
Confidentiality, Type, and	Guideline	None; Experimental; Not specified		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,		NR; NR; NR; NR		
System		Not reported		
Temperature		Not Reported		
Standard Deviation Results	S	Not reported		
Results Details		Relative vapor density (air = 1)		
			EVALUATIO	N .
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 Reliabil	lity			
	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	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 Quali	tv Determi	nation	High	

<sup>\*</sup> Related References: ILO International Chemical Safety Cards (ICSC). Tris(2-Chloroethyl) Phosphate). [Website]. https://www.ilo.org/dyn/icsc/showcard.display?p\_version=2&p\_card\_id=1677

<b>Study Citation:</b>	Brommer, S., Jantunen, L. M., Bidleman, T. F., Harrad, S., Diamond, M. L. (2014). Determination of vapor pressures for organophosphate esters. Journal of Chemical and Engineering Data 59(5):1441-1447.				
OECD Harmonized	Vapor Pressure	i Engineering Data 39(3).1441-1447.			
Template:					
HERO ID:	2705112				
			EXTRACTIO	N	
Parameter		Data			
Vapor Pressure		NA 4.8E-2 - NA NA Pa			
CASRN and Test Material		115-96-8; tris(2-chloroethyl)phosphate			
Confidentiality, Type, and C	Guideline	NR; Experimental; Non-guideline; gas cl	hromatography rete	ention time method	
Solvent, Reactivity, Storage, and Stability		isooctane; NR; NR	omatograpily rec		
Radiolabel, Source, State, a		NR; Sigma Aldrich Seelze, Germany; NI	R: 97% purity Note	es: NR	
Temperature		298.15	, 1		
System					
		$0.25$ mmi.d., $0.25~\mu$ m film, J&W Scientif	fic, USA) in Agiler	nt 6890N GC-5973 MSD.	
Standard Deviation Results		standard uncertainty 0.2 (p298/Pa)			
Results Details		Also reported as $\log -1.32$			
			EVALUATIO	N	
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.	
D	•				
Domain 2: Test Reliabil	Metric 3:	Reliability/Unbiased	High	Peer-reviewed journal article with results compared to other literature values.	
	Medic 3.	(Method Objectivity)	High	reer-reviewed journal article with results compared to other interature values.	
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate based on the	
				data's inclusion in a peer-reviewed journal.	
Domain 3: Other					
Domain J. Onici	Metric 5:	Databases	N/A	This metric is not applicable to this type of study.	
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.	
<b>Overall Qualit</b>	ty Determin	nation	High		

<sup>\*</sup> Related References: NA

Metric 6:

**Overall Quality Determination** 

Models

Study Citation: OECD Harmonized Template:	Dobry, A., Kell Vapor Pressure	, , , , , , , , , , , , , , , , , , , ,	osphate and pho	osphonate esters. Journal of Physical Chemistry 61(10):1448-1449.				
HERO ID:	5186315							
			EXTRACTIO	DN .				
Parameter		Data						
Vapor Pressure		0.0613 mm Hg						
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate						
Confidentiality, Type, and	Guideline	None; Experimental; Non-guideline study	y					
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR						
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR	NR; NR; NR; NR					
Temperature		25°C						
System		Conventional isoteniscope with nitrogen atmosphere.						
Standard Deviation Results	S	Not reported						
Results Details		Thermal decomposition at 172°C reported						
			EVALUATIO	N				
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 Reliabil	lity							
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question and the objective is clear.				
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by an accepted standard analytical method.				
Domain 3: Other								
	Metric 5:	Databases	High	The data is from a primary, peer-reviewed source.				

N/A

High

Rating of this factor is not applicable to this kind of information.

Study Citation: OECD Harmonized	EC, (2009). Scr Vapor Pressure	2	anol, 2-chloro-,	phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
Template: HERO ID:	5160070			
		]	EXTRACTIO	N
Parameter		Data		
Vapor Pressure		< 10 - Pa		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		20 C		
System		NR		
Standard Deviation Results	S	NR		
Results Details		Not Reported		
			EVALUATIO:	N
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 Reliabil	lity			
	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 Quali	ty Determi	nation	High	

<sup>\*</sup> Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation: OECD Harmonized	ECB, (2009). E Vapor Pressure	European Union risk assessment report: Tris	(2-chloroethyl)	) phosphate, TCEP. :213.
Template: HERO ID:	3809216			
		]	EXTRACTIO	N
Parameter		Data		
Vapor Pressure		0.00114 - Pa		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Extrapolated; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		20 deg C		
System		NR		
Standard Deviation Result	S	NR		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabi	lity			
	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.

<sup>\*</sup> Related References: Primary Source: Akzo Nobel 2000

Study Citation: OECD Harmonized	ECB, (2009). E Vapor Pressure	European Union risk assessment report: Tris	s(2-chloroethyl	) phosphate, TCEP. :213.
Template: HERO ID:	3809216			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		43 - Pa		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		136.9 deg C		
System		NR		
Standard Deviation Result	s	NR		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabi	lity			
	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.
<b>Overall Quali</b>	ty Determi	nation	High	

<sup>\*</sup> Related References: Primary Source: Akzo Nobel 2000

Metric 6:

**Overall Quality Determination** 

Models

Study Citation: OECD Harmonized	IPCS, (1998). F Vapor Pressure	Flame retardants: Tris(chloropropyl) phospl	hate and tris(2-o	chloroethyl) phosphate.
Template: HERO ID:	79051			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		< 10 mm Hg		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; Not Reported		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,		None; NR; liquid; NR		
Temperature	·	25°C		
System		Not Reported		
Standard Deviation Result	s	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabi	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.

N/A

Low

Rating of this factor is not applicable to this kind of information.

Study Citation: OECD Harmonized	NCBI, (2020). Vapor Pressure	PubChem database: Compound summary:	Tris(2-chloroet	hyl) phosphate.
Template: HERO ID:	6629833			
		1	EXTRACTIO	N
Parameter		Data		
Vapor Pressure		0.5 mm Hg		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Temperature		293°F (145°C)		
System		Not reported		
Standard Deviation Results	3	Not reported		
Results Details		Not reported		
			EVALUATIO:	N
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 Reliabil	lity			
	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 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 Quali	ty Determi	nation	High	

<sup>\*</sup> Related References: National Toxicology Program, Institute of Environmental Health Sciences, National Institutes of Health (NTP). 1992. National Toxicology Program Chemical Repository Database. Research Triangle Park, North Carolina. CAMEO Chemicals.

Study Citation: OECD Harmonized Template:	NCBI, (2020). Pu Vapor Pressure	abChem database: Compound summary:	Tris(2-chloroet	hyl) phosphate.
HERO ID:	6629833			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		0.06 mm Hg		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	nd Purity	NR; NR; NR; NR		
Temperature		Not reported		
System		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	ity			
	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 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 Qualit	v Determin	ation	High	

<sup>\*</sup> Related References: Expected to be the same value as the one reported in HSDB; however, in a rounded format. EPA DSSTox. URL: https://comptox.epa.gov/dashboard/DTXSID5021411.

Study Citation: OECD Harmonized Template:	NIST, (2021). NI Vapor Pressure	ST Chemistry WebBook. Standard Refe	erence Database	No. 69. Tri(2-chloroethyl) phosphate (115-96-8).
HERO ID:	10225164			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		Not Reported		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	duideline	Not Reported; Not Reported; NR		
Solvent, Reactivity, Storage	, and Stability	NR; NR; NR		
Radiolabel, Source, State, a	nd Purity	NR; NR; NR; NR Notes: NR		
Temperature		NR		
System		Calculated from the vapor pressure data i	reported by the me	thod of least squares
Standard Deviation Results		NR		
Results Details		$\Delta H = 36.7 \text{ kJ/mol at } 308 \text{K}$		
			EVALUATIO	N
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 Reliabili	ty			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	v Determin	nation	High	

<sup>\*</sup> Related References: Citing Stephenson and Malanowski, 1987. HERO ID 10284658 Based on data from 293-445K (Dykyj, 1972)

Study Citation: OECD Harmonized	NLM, (2015). I Vapor Pressure	PubChem: Hazardous substance data bank:	Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		6.13E-2 mm Hg		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Temperature		25°C		
System		Not Reported		
Standard Deviation Results	3	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
Domain		Metric	Rating	Comments
Domain 1: Substance			<del>-</del>	
	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 Reliabil	lity			
	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.

<sup>\*</sup> Related References: Dobry, A; Keller, R. 1957. J Phys Chem 61: 1448-9.

Study Citation: OECD Harmonized	OECD, (2012). Vapor Pressure		the course of the OE	CD HPV chemicals programme from 1993 to 2011.
Template: HERO ID:	0641570			
HERO ID:	9641572			
			EXTRACTION	
Parameter		Data		
Vapor Pressure		0.00114 - Pa		
CASRN and Test Material		115-96-8; tris(2-chloroethylphosphate)		
Confidentiality, Type, and	Guideline	None; Extrapolated; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		20 C		
System		NR		
Standard Deviation Results	S	Not Reported		
Results Details		Extrapolated from a measured value of 43	Pa at 137 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 Reliabil	litv			
	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 Quali	tv Determi	nation	Medium	

<sup>\*</sup> Related References: No citation reported.

Study Citation:				T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures			
OECD Harmonized	Vapor Pressure		anic compounds o	of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.			
Template:	(0(7250						
HERO ID:	6967359						
			EXTRACTIO	ON CONTRACTOR OF THE PROPERTY			
Parameter		Data					
Vapor Pressure		0.0372 - 0.0562 Pa					
CASRN and Test Material		115-96-8; tris(2-chloroethyl)phosphate					
Confidentiality, Type, and	Guideline	None; Experimental; Non-guideline: Ga	as chromatography	retention time GC-RT method			
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR					
Radiolabel, Source, State,	and Purity	NR; Accustandard; NR; 100% Notes: T	CEP				
Temperature		estimated at 298K; experimental: 333-3	*				
System		C 1	retention time is inv	versely proportional and proportional to its temperature dependent liquid-phase vapor			
Standard Deviation Results		pressure  ±0.18 (standard pradiction uncertainty actimated at K = 208)					
Results Details	S	±0.18 (standard prediction uncertainty estimated at K = 298)  Calibrated Log10 Liquid-Phase Vapor Pressure = -1.25 (VP = 0.0562 Pa, ca. 4.2E-4 mm Hg); uncalibrated value Log10 Liquid-Phase Vapor					
Results Details				Hg) (Average enthalpy of vaporization = 81.5±10 kJ/mol; HCB used as a reference			
		compound)					
			EVALUATIO	N			
Domain		Metric	Rating	Comments			
Domain 1: Substance			<u> </u>				
	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 Reliabil	lity						
	Metric 3:	Reliability/Unbiased	High	The methodology for producing the information is designed to answer a specific ques-			
	36.1.4	(Method Objectivity)	3.6.11	tion, 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							
Domain 5: Other	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.			
	Metric 5:	Models	High	The model had a defined, unambiguous endpoint; $r2 = 0.978$ .			
-	wienie o.	14100013	Tilgli	The model had a defined, unamorguous endpoint, 12 – 0.776.			
Overall Quali	ty Dotormi	instion	High				
Over all Quali	ty Determin		THE				

Study Citation:			and orthocarbo	onic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols,
OECD Harmonized	and organic silico Vapor Pressure	on. :353-424.		
Template:	<b>.</b>			
HERO ID:	5332876			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		0.5 mm Hg		
CASRN and Test Material	G : 1 1:	115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C		None; Experimental; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
Temperature		145°C		
System Standard Deviation Results	_	Not reported		
	S	Not reported		
Results Details		Not reported		
_			EVALUATIO:	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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				
Domain J. Onici	Metric 5:	Databases	High	The information is from a data collection prepared by experts in the field.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
				6
<b>Overall Qualit</b>	ty Determin	ation	High	

Study Citation: OECD Harmonized	U.S. EPA, (201 Vapor Pressure		rmulation and	Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
Template: HERO ID:	4565574			
		I	EXTRACTIO	N
Parameter		Data		
Vapor Pressure		1.14 E-3 Pa		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	no; not specified; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	None; NR; liquid; NR		
Temperature		Not Reported		
System		Not Reported		
Standard Deviation Results	S	Not Reported		
Results Details		Not Reported		
		]	EVALUATIO:	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Determi	ination	High	

<sup>\*</sup> Related References: Citing EU (European Union). 2008b. European Union Risk Assessment Report: Tris[2-Chloro-1- (Chloromethyl)Ethyl] Phosphate (TDCP) CAS No: 13674-87-8. Ireland and United Kingdom, Luxembourg. http://echa.europa.eu/documents/10162/6434698/orats\_final\_rar\_tris2-chloro1-chloromethyleth\_en.pdf

Study Citation: OECD Harmonized	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. Vapor Pressure				
Template: HERO ID:	5113326				
HERO ID.	3113320		TYPE LOWYOU		
<b>D</b> 4		D 4	EXTRACTION		
Parameter		Data			
Vapor Pressure		= 0.062 - mm Hg			
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate			
Confidentiality, Type, and C	Guideline	none; calculation; not reported			
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR			
Temperature		25°C			
System		Measured with a conventional isoteniscope	e using a nitrogen atmosphere		
Standard Deviation Results		not reported			
Results Details		Value calculated from reported equation co	pefficients determined by experimen	ntal measurements and equation fitting.	
			EVALUATION		
Domain		Metric	Rating	Comments	
Domain 1: Substance					
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.	
	Metric 2:	Appropriateness	Low	Reported value for the subject chemical substance is inconsistent with other available data.	
Domain 2: Test Reliabil	ity				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.	
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical 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 Qualit	ty Determi	nation	Uninformative		

<sup>\*</sup> Related References: Cited source - ATSDR, 2012

Study Citation: OECD Harmonized	U.S. EPA, (2015 Vapor Pressure	). Flame retardants used in flexible polyur	rethane foam: A	An alternatives assessment update.
Template: HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		
Vapor Pressure		< 0.075 mm Hg		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	none; extrapolated; ASTM D232 method		
Solvent, Reactivity, Storage	, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	nd Purity	NR; NR; NR; NR Notes: NR		
Temperature		20°C		
System		not reported		
Standard Deviation Results		not reported		
Results Details		Reported as <0.1 hPa at 20°C; approximate	ted from data at h	igher temperatures.
			EVALUATIO	N
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 Reliabili	ity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
<b>Overall Qualit</b>	y Determin	nation	High	

<sup>\*</sup> Related References: Cited source - EC, 2000 Iuclid dataset

Study Citation: OECD Harmonized	U.S. EPA, (201) Vapor Pressure	5). Flame retardants used in flexible polyur	rethane foam: A	An alternatives assessment update.
Template: HERO ID:	5113326			
neko ib.	3113320		EXTRACTIO	N
Parameter		Data	EATRACTIO	TY
Vapor Pressure		= 1.6E-5 - mm Hg		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C		none; extrapolated; not reported		
Solvent, Reactivity, Storage	•	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR		
Temperature		25°C		
System		not reported		
Standard Deviation Results Results Details		not reported	y dynamia matha	d; measured values reported as: 0.43 hPa at 136.9°C; 0.99 hPa at 143.5°C; 2.03 hPa at
Results Details		158.6°C; 5.00 hPa at 174.1°C; 15.03 hPa a		u, measured values reported as. 0.43 fira at 130.9 C, 0.99 fira at 143.5 C, 2.03 fira at
			EVALUATIO	N
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: Cited source - EU (2009)

Study Citation: OECD Harmonized Template:	U.S. EPA, (2013) Vapor Pressure	5). Flame retardants used in flexible polyuro	ethane foam: A	An alternatives assessment update.
HERO ID:	5113326			
		]	EXTRACTIO	N
Parameter		Data		
Vapor Pressure		= 8.55E-6 - mm Hg		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and G	duideline	none; extrapolated; not reported		
Solvent, Reactivity, Storage	, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, as	nd Purity	NR; NR; NR Notes: NR		
Temperature		20°C		
System		not reported		
Standard Deviation Results		not reported		
Results Details		Reported as 0.00114 Pa at 20°C; extrapolat	ed from a measu	ared value of 43 Pa at 137°C.
			EVALUATIO	N
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 Reliabili	ty			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: Cited source - OECD-SIDS, 2006; EU, 2009

Study Citation: OECD Harmonized	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8  Vapor Pressure					
Template: HERO ID:	5926157					
EXTRACTION						
Parameter		Data				
Vapor Pressure		0.0613 mm Hg				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	None; Experimental; Not reported				
Solvent, Reactivity, Storage, and Stability		NR; NR; NR; NR				
Radiolabel, Source, State, and Purity		NR; NR; NR; NR				
Temperature		Not Reported				
System		Not Reported				
Standard Deviation Results		Not Reported				
Results Details		Not Reported				
			EVALUATIO	N		
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 Reliabil	ity					
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
		(Method Objectivity)		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 Qualit	ty Determi	nation	High			

<sup>\*</sup> Related References: PhysProp. Dobry, A and Keller, R 1957

Study Citation:	Verbruggen, J.,	, E.M., Rila, J. P., Traas, T. P., Posthuma-	Doodeman, A.,M, C	C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate
		ssible application as flame retardant.		
OECD Harmonized	Vapor Pressure			
Template:				
HERO ID:	5349334			
			EXTRACTION	
Parameter		Data		
Vapor Pressure		6.67 - Pa		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		Not Reported; not specified; NR		
Solvent, Reactivity, Storag		Not Reported; Not Reported; Not Reporte	-	
Radiolabel, Source, State,	and Purity	Not Reported; Not Reported; Not Reporte	d; Not Reported	
Temperature		Not Reported		
System		not reported		
Standard Deviation Result	S	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 Reliabi	litv			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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				
Domain J. Onici	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 Quali	ty Determi	ination	Medium	
Over all Quali	ij Determi		MICUIUIII	

 $<sup>^\</sup>star$  Related References: Citing Brodsky et al. (1997) HERO ID 2131375; not entered into Distiller.

Study Citation:			Doodeman, A.,M, C	J., Posthumus, R. (2005). Environmental risk limits for several phosphate		
OECD Harmonized	esters, with pos Vapor Pressure	sible application as flame retardant.				
Template:	vapor i ressure					
HERO ID:	5349334					
			EXTRACTION			
Parameter		Data				
Vapor Pressure		3.7E-04 - Pa				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	Not Reported; not specified; NR				
Solvent, Reactivity, Storag	e, and Stability	Not Reported; Not Reported; Not Reported	d; Not Reported			
Radiolabel, Source, State, and Purity  Not Reported; Not Reported; Not Reported						
Temperature	erature 20 deg C					
System	not reported					
Standard Deviation Result	S	not reported				
Results Details		Reported as 2.7 at 90°C; 0.25 at 70°C; 0.08	32 at 60°C; 0.017 at 46	°C 3.7 E-04 at 20°C and extrapolated 7.9E-04 at 25°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 Reliabi	lity					
	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.		
	ty Determi	-	Medium			

<sup>\*</sup> Related References: Citing Bayer (1980) in GDCh (1987) not in HERO.

Study Citation:	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate esters, with possible application as flame retardant.				
OECD Harmonized	Vapor Pressure	siole application as name retardant.			
Template: HERO ID:	5349334				
			EXTRACTION		
Parameter		Data			
Vapor Pressure		67 - Pa			
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate			
Confidentiality, Type, and	Guideline	Not Reported; not specified; NR			
Solvent, Reactivity, Storag	e, and Stability	Not Reported; Not Reported; Not Reported	ed; Not Reported		
Radiolabel, Source, State,	and Purity	Not Reported; Not Reported; Not Reported	ed; Not Reported		
Temperature	Temperature Not Reported				
System	not reported				
Standard Deviation Results	S	not reported			
Results Details		Typo in report 67 at 145 25 °C; should be	0.5 mm Hg at 145 deg	C	
			EVALUATION		
Domain		Metric	Rating	Comments	
Domain 1: Substance					
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.	
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.	
Domain 2: Test Reliabil	lity				
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.	
	Metric 4:	(Method Objectivity) Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.	
Domain 3: Other					
Domain 3. Outer	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 Quali	ty Determi	nation	Medium		

<sup>\*</sup> Related References: Citing Muir 1984, HERO ID 4198360.

Study Citation:			-Doodeman, A.,l	M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate		
OECD Harmonized	esters, with pos Vapor Pressure	sible application as flame retardant.				
Template:	vapor i ressure					
HERO ID:	5349334					
			EXTRACTIO	N		
Parameter		Data				
Vapor Pressure		8.22 - Pa				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	Not Reported; calculation; isoteniscope				
Solvent, Reactivity, Storage	e, and Stability	Not Reported; Not Reported; Not Report	ed; Not Reported			
Radiolabel, Source, State,	and Purity	Not Reported; Not Reported; Not Report	ed; Not Reported			
Temperature 25°C						
System	not reported					
Standard Deviation Results	3	not reported				
Results Details		8.22 Pa (extrapolated; isoteniscope)				
			EVALUATIO	N .		
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 Reliabil	lity					
	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 Quali			High			

<sup>\*</sup> Related References: Dobry & Keller (1957)

Domain 3: Other

<u> </u>							
Study Citation:	dependent octa	nol-air partition coefficients and vapor pre		deling the phase partitioning of organophosphate esters using their temperature- mental Science & Technology 54(13):8133–8143.			
OECD Harmonized	Vapor Pressure						
Template:							
HERO ID:	10064224						
			EXTRACTIO	N			
Parameter		Data					
Vapor Pressure		-1.32 log (Pa)					
CASRN and Test Material		Not Reported; Tris(2-chloroethyl) phosph	ate				
Confidentiality, Type, and Guideline				pethod			
Solvent, Reactivity, Storage, and Stability		NR; NR; NR	none; experimental; gas chromatographic retention times method				
Radiolabel, Source, State, and Purity		None; NR; NR					
Temperature		25°C					
System		Solutions run at 5-8 temperatures and retention times compared to 3 reference compounds					
Standard Deviation Results	S	$\pm0.0032$					
Results Details		reported as log PL (Pa) = $-1.32 \pm 0.0032$ ; surrogate TCEP-d12 = $-1.26 \pm 0.0041$ ; results were compared to 3 other studies.					
			EVALUATIO	N			
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 Reliabil	lity						
	Metric 3:	Reliability/Unbiased	High	The methodology for producing the information is designed to answer a specific ques-			
		(Method Objectivity)		tion, 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.			

## Overall Quality Determination High

Databases

Models

Metric 5:

Metric 6:

N/A

N/A

Rating of this factor is not applicable to this kind of information.

Rating of this factor is not applicable to this kind of information.

Study Citation: OECD Harmonized	EC, (2009). Scr logKow	eening Assessment for the Challenge: Etha	anol, 2-chloro-,	phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
Template:				
HERO ID:	5160070			
		]	EXTRACTIO	N
Parameter		Data		
$\log k_{ow}$		1.47 - 1.78		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	duideline	None; Experimental; NR		
Solvent, Reactivity, Storage		NR; NR; NR; NR		
Radiolabel, Source, State, a		NR; NR; NR Notes: NR		
Temperature	-	20 deg C		
System		NR		
pH		NR		
Results Details Method		NR		
Standard Deviation Results		NR		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabili	tv			
	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				
Domain 3. Outer	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.
<b>Overall Qualit</b>	y Determi	nation	High	

<sup>\*</sup> Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation: OECD Harmonized Template:	ECB, (2009). E logKow	European Union risk assessment report: Tri-	s(2-chloroethyl	) phosphate, TCEP. :213.
HERO ID:	3809216			
			EXTRACTIO	N
Parameter		Data		
log k <sub>ow</sub>		1.78 -		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR; NR		
Radiolabel, Source, State, a	nd Purity	NR; NR; NR; NR Notes: NR		
Temperature		NR		
System		NR		
pH		NR		
Results Details Method		NR		
Standard Deviation Results		NR		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabili	ty			
	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 Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: Primary Source: Hazelton Europe 1994

Study Citation: Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated for logKow			on of emerging halogenated flame retardants in the environment. 88:1-39.	
Template:				
HERO ID:	8775306			
			EXTRACTION	
Parameter		Data		
loo k		1.63 -		
log k <sub>ow</sub> CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Not specified; NR		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,		NR; NR; NR Notes: NR		
Temperature	and I army	25 C		
System		NR		
pH		NR		
Results Details Method		NR		
Standard Deviation Results	s	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 Reliabil	lity			
	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:	(Method Objectivity) 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 Quali	ty Determi	ination	Medium	

<sup>\*</sup> Related References: Cites EPI Suite and secondary source I. Pantelaki, D. Voutsa, Organophosphate flame retardants (OPFRs): a review on analytical methods and occurrence in wastewater and aquatic environment, Sci. Total Environ. 649 (2019) 247–263. (HEROID unknown).

Study Citation: OECD Harmonized Template:	Elsevier, (2019) logKow	). Reaxys: physical-chemical property data	for Tris(2-chlo	proethyl) phosphate. CAS Registry Number: 115-96-8		
HERO ID:	5926432					
			EXTRACTIO	N		
Parameter		Data				
$\log k_{ow}$		0.54 - 1.4				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported				
Solvent, Reactivity, Storag	e, 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	S	Not Reported				
Results Details		2 values were reported in Reaxys; Measure	ed conditions wer	re not reported.		
			EVALUATIO	N N		
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 Reliabil	lity					
	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 Quali	ty Determi	nation	High			

<sup>\*</sup> Related References: Data range determined from multiple primary sources in REAXYS.

Study Citation: OECD Harmonized	IPCS, (1998). I logKow	Flame retardants: Tris(chloropropyl) phosp	phate and tris(2-	chloroethyl) phosphate.
Template: HERO ID:	79051			
			EXTRACTIO	N .
Parameter		Data		
11-		1.7		
log k <sub>ow</sub> CASRN and Test Material	I	1.7 115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		no; not specified; NA		
Solvent, Reactivity, Storag		NA; NA; NA		
Radiolabel, Source, State,	•	NA; NA; liquid; NA		
Temperature	and I unity	Not Reported		
System		Not Reported		
рН		Not Reported		
Results Details Method		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabi	litv			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Dotomo	ination	Low	
Overall Quali	iy Deterill	เมลเเปม	LUW	

Study Citation: OECD Harmonized	NLM, (2015). logKow	PubChem: Hazardous substance data bank	:: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template:				
HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data		
$\log k_{ow}$		1.78		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storag		NR; NR; NR; NR		
Radiolabel, Source, State,		NR; NR; NR; NR		
Temperature	•	Not Reported		
System		Not Reported		
pН		Not Reported		
Results Details Method		Not Reported		
Standard Deviation Results	s	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
Domain 2. Test Kenaon	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	wienie 3.	(Method Objectivity)	Wicaram	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 inclu-
				sion in a peer-reviewed/recognized database or other secondary source.
D 2. Oth				
Domain 3: Other	Metric 5:	Databases	I I i al-	Date in face a contribute contribute and accompanient database that of an
	Metric 3:	Databases	High	Data is from a publicly available and peer-reviewed database that references a review document.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Dotormi	instion	Цigh	
Over all Quall	iy Determi	เมลมปม	High	

<sup>\*</sup> Related References: European Chemicals Bureau. 2000. IUCLID Dataset, Tris (2-Chloroethyl) phosphate (2000-CD-Rom edition)

Study Citation: OECD Harmonized	NLM, (2015). logKow	PubChem: Hazardous substance data bank	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data	21111110110	
log k <sub>ow</sub>		1.43		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		None; Experimental; Not Reported		
Solvent, Reactivity, Storag	-	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Temperature		Not Reported		
System		Not Reported		
pH Results Details Method		Not Reported Not Reported		
Standard Deviation Result	6	Not Reported		
Results Details	5	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabi	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)	1110010111	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				
Domain 3. Outer	Metric 5:	Databases	High	Data is from a publicly available and peer-reviewed database that references a review document.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Oreal	tr. Dotor		IIiala	
<b>Overall Quali</b>	ty Determi	เกลนอก	High	

<sup>\*</sup> Related References: NITE; Chemical Risk Information Platform (CHRIP). Biodegradation and Bioconcentration. Tokyo, Japan: Natl Inst Tech Eval. Available from, as of Oct 29, 2014: https://www.safe.nite.go.jp/english/db.html

Study Citation: OECD Harmonized	U.S. EPA, (201 logKow	5). TSCA Work Plan Chemical Problem F	ormulation and	Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.		
Template: HERO ID:	4565574					
			EXTRACTIO	N		
Parameter		Data				
log k <sub>ow</sub>		1.78				
CASRN and Test Material	G : 1 1:	115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and C		none; not specified; Not Reported				
Solvent, Reactivity, Storage		NR; NR; NR				
Radiolabel, Source, State, a	and Purity	None; NR; liquid; NR				
Temperature		Not Reported				
System		Not Reported				
pH Results Details Method		Not Reported Not Reported				
Standard Deviation Results		Not Reported				
Results Details	•	Not Reported				
Results Details		Not Reported				
			EVALUATIO	N		
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 Reliabil	ity					
Domain 2. Test Kenaon	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
	wiethe 3.	(Method Objectivity)	Wicdiani	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	Domain 2: Othor					
Domain J. Oulei	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are		
	Wettle 3.	Databases	mgn	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.		
O	4 Da4		TT!_1			
Overall Qualit	ıy Determi	nauon	High			

Study Citation: OECD Harmonized	U.S. EPA, (201 logKow	5). Flame retardants used in flexible polyu-	rethane foam: A	An alternatives assessment update.
Template:	logitow			
HERO ID:	5113326			
			EXTRACTIO	N.
Parameter		Data	EXTRACTIO	14
log k		= 1.7 -		
log k <sub>ow</sub> CASRN and Test Material		= 1.7 - 115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and (	Suidalina	none; experimental; not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a		NR; NR; NR; NR Notes: NR		
Temperature	ind I drity	not reported		
System		not reported		
pH		not reported		
Results Details Method		not reported		
Standard Deviation Results		not reported		
Results Details		not reported		
			<b>EVALUATIO</b>	N
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Sources cited - IPCS, 1998; NICNAS, 2001

Study Citation: OECD Harmonized	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. logKow					
Template: HERO ID:	5113326					
			EXTRACTIO	N		
Parameter		Data				
log k <sub>ow</sub>		= 1.78 -				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	none; experimental; Directive 84/449/EB	EC., A.8, Partition o	coefficient, 1984 Method		
Solvent, Reactivity, Storag	e, 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	S	not reported				
Results Details		GLP study				
			EVALUATION	N		
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 Reliabil	lity					
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
	M-4 4.	(Method Objectivity)	TT: -1-	towards a particular product or outcome.		
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted 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 Quali	ty Determi	nation	High			

<sup>\*</sup> Related References: Sources cited - EC, 2000; EU, 2009; also entered under HERO ID 5926126

Study Citation: OECD Harmonized	U.S. EPA, (201 logKow	5). Flame retardants used in flexible poly	urethane foam: A	An alternatives assessment update.		
Template: HERO ID:	5113326					
			EXTRACTIO	N		
Parameter		Data				
$\log k_{ow}$		= 1.47 -				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and				cient (n-octanol/water), Flask-shaking Method, 1981		
Solvent, Reactivity, Storag		NR; NR; NR; NR	or, runnion coem	cion (ii octation water), i task shaking interior, 1901		
Radiolabel, Source, State,	-	NR; NR; NR; NR Notes: NR				
Temperature		not reported				
System		not reported				
рН		not reported				
Results Details Method		not reported				
Standard Deviation Results	S	not reported				
Results Details		not reported				
			EVALUATIO	N		
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 Reliabil	lity					
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
		(Method Objectivity)		towards a particular product or outcome.		
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.		
Domain 3: Other						
- N	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 Quali	ty Determi	nation	High			

<sup>\*</sup> Related References: Source cited - EC, 2000

Study Citation: OECD Harmonized	U.S. EPA, (201 logKow	5). Flame retardants used in flexible polyure	ethane foam: A	An alternatives assessment update.
Template: HERO ID:	5113326			
		I	EXTRACTIO	N
Parameter		Data		
$\log k_{ow}$		= 1.44 -		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		none; experimental; not reported		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,	•	NR; NR; NR; NR Notes: NR		
Temperature	and I drity	not reported		
System		not reported		
pH		not reported		
Results Details Method		not reported		
Standard Deviation Results	s	not reported		
Results Details		not reported		
		-		
			EVALUATIO	
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 Reliabil	1; <sub>657</sub>			
Domain 2. Test Kenabi	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	Metric 3.	(Method Objectivity)	Medium	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
	Wietile 1.	Remainity// mary tear 1/1ethod	Wicarum	inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
Domain J. Outer	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are
	weare 3.	Databases	Tilgii	peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources; however, original reference appears to be incorrect.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
0	4 D-4 '		TT! -1	
Overall Quali	ıy Determi	nauon	High	

<sup>\*</sup> Related References: Sources cited - MITI, 1992a (as cited in ATSDR, 2012) MITI (1992a) 2,2-Bis (4'-hydroxy-3',5'-dibromophenyl) propane. In: Chemicals Inspection & Testing Institute, Japan, eds. Biodegradation and bioaccumulation data of existing chemicals based on the CSCL Japan. Tokyo: Japan Chemical Industry Ecology- Toxicology & Information Center. Ministry of International Trade & Industry, 4-14.

Study Citation: OECD Harmonized	U.S. EPA, (2019 logKow	). Chemistry dashboard information for t	tris(2-chloroethy	l) phosphate. 115-96-8		
Template:	C					
HERO ID:	5926157					
			EXTRACTIO	N		
Parameter		Data				
$\log k_{ow}$		1.44				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported				
Solvent, Reactivity, Storag		NR; NR; NR				
Radiolabel, Source, State,		NR; NR; NR; NR				
Temperature		Not Reported				
System		Not Reported				
рH		Not Reported				
Results Details Method		Not Reported				
Standard Deviation Results	s	Not Reported				
Results Details		Not Reported				
			THE TAXABLE			
D		Matria	EVALUATIO:			
Domain		Metric	Rating	Comments		
Domain 1: Substance	M-4 1.	D	TT: _1.			
	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 Reliabil	lity					
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
		(Method Objectivity)		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 references peer-reviewed original sources.		
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.		
Overall Qualit	Overall Quality Determination High					
O , Clair Quali	J Determin		****8**			

<sup>\*</sup> Related References: PhysProp. Chemicals Inspection and Testing Institute. 1992

Study Citation:	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate				
OECD Harmonized	esters, with pos logKow	sible application as flame retardant.			
Template:	C				
HERO ID:	5349334				
		1	EXTRACTION		
Parameter		Data			
$\log k_{ow}$		0.54 -			
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate			
Confidentiality, Type, and	Guideline	none; experimental; not reported			
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR			
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR Notes: NR			
Temperature		Not reported			
System		Not reported			
pН		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 Reliabil	ity				
	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					
Zoman 3. Outer	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 Qualit	ty Determi	nation	Medium		

<sup>\*</sup> Related References: Source cited: Brodsky et al. (1997) HERO ID 2131375

Study Citation:		Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate				
OECD Harmonized	esters, with pos logKow	sible application as flame retardant.				
Template: HERO ID:	5349334					
			EXTRACTIO	N .		
Parameter		Data				
log k <sub>ow</sub>		1.43 -				
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate				
Confidentiality, Type, and C	Guideline	none; experimental; shake-flask				
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR				
Radiolabel, Source, State, a	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	3	Not reported				
Results Details		Not reported				
			EVALUATIO	N		
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 Reliabil	ity					
	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	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 Qualit	ty Determi	nation	High			

<sup>\*</sup> Related References: Source cited: Sasaki et al. (1981); also entered under NLM HERO ID 5926126

Study Citation:		Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate				
OECD Harmonized	esters, with pos logKow	ssible application as flame retardant.				
Template:	logito.					
HERO ID:	5349334					
			EXTRACTIO	N		
Parameter		Data				
$\log k_{ow}$		1.44 -				
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate				
Confidentiality, Type, and		none; experimental; not reported				
Solvent, Reactivity, Storage	•	NR; NR; NR; NR				
Radiolabel, Source, State,	and Purity	NR; NR; NR Notes: NR				
Temperature		Not reported				
System		Not reported				
pH		Not reported				
Results Details Method		Not reported				
Standard Deviation Results	S	Not reported				
Results Details		Not reported				
			EVALUATIO			
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 Reliabil	lity					
	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 Quali	ty Determi	nation	High			

<sup>\*</sup> Related References: Source cited: CITI (1992); also entered under HERO ID 5926157

<b>Study Citation:</b>	Verbruggen, J., E.M., Rila, J. P., Traas, T. P., Posthuma-Doodeman, A.,M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate esters, with possible application as flame retardant.				
OECD Harmonized	logKow	sible application as name retardant.			
Template:	_				
HERO ID:	5349334				
			EXTRACTION		
Parameter		Data			
log k <sub>ow</sub>		1.48 -			
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate			
Confidentiality, Type, and C	Guideline	none; not specified; not reported			
Solvent, Reactivity, Storage		NR; NR; NR; NR			
Radiolabel, Source, State, a	-	NR; NR; NR Notes: NR			
Temperature	<b>.</b>	Not reported			
System		Not reported			
pН		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 Reliabil	itv				
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased	
		(Method Objectivity)		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					
Domain J. 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 Qualit	Overall Quality Determination				

<sup>\*</sup> Related References: Source cited: Muir (1984)

Study Citation:			Doodeman, A.,M, C.	J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	logKow	sible application as flame retardant.		
Template:				
HERO ID:	5349334			
			EXTRACTION	
Parameter		Data		
$\log k_{ow}$		1.7 -		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	none; not specified; not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, and Purity		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		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 Reliabil	ity			
	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				
_ January Cuide	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 Qualit	y Determi	nation	Medium	

<sup>\*</sup> Related References: Source cited: IPCS (1998) and Yoshioka et al. (1986)

Study Citation:			-Doodeman, A.,l	M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	logKow	sible application as flame retardant.		
Template: HERO ID:	5349334			
			EXTRACTIO	N
Parameter		Data		
$\log k_{ow}$		1.78 -		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	none; experimental; shake-flask		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR		
Temperature		Not reported		
System		Not reported		
pН		Not reported		
Results Details Method		Not reported		
Standard Deviation Results		Not reported		
Results Details		Not reported		
			EVALUATION	N
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 Reliabili	ity			
	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	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 Qualit	y Determi	nation	High	

<sup>\*</sup> Related References: Source cited: Hazelton (1994b) in EuropeanCommission (2004c)

Study Citation:		e e	nol, 2-chloro-,	phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).			
OECD Harmonized	Water Solubilit	y					
Template:							
HERO ID:	5160070						
		I	EXTRACTIO	N			
Parameter		Data					
Water Solubility		7820 - mg/L					
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate					
Confidentiality, Type, and C	Guideline	None; Experimental; NR					
Solvent, Reactivity, Storage	, and Stability	NR; NR; NR; NR					
Radiolabel, Source, State, a	nd Purity	NR; NR; NR Notes: NR					
Temperature		20 C					
System		NR					
рН		NR					
Results Details Method		NR					
Standard Deviation Results		NR					
Results Details		Not Reported					
Domain		Metric	EVALUATIO Rating	N Comments			
Domain 1: Substance			- Tuuing	Commons			
2 omain 11 Suostanee	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 Reliabili	ty						
	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							
Domain J. Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are			
	Medic J.	Databases	mgn	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 Qualit	v Determi	nation	High				

<sup>\*</sup> Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795); previously extracted under a different HEROID.

Study Citation: OECD Harmonized	ECB, (2009). E Water Solubility	European Union risk assessment report: Tri	is(2-chloroethyl	) phosphate, TCEP. :213.
Template: HERO ID:	3809216			
IIERO ID.	300)210		EXTRACTIO	N.
Parameter		Data	EATRACTIO	
Water Solubility		7820 - mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; NR		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State, and Purity		NR; NR; NR Notes: NR		
Temperature		20 deg C		
System		NR		
pH		NR		
Results Details Method		NR		
Standard Deviation Results	s	NR		
Results Details		Not Reported		
			EVALUATIO	N .
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 Reliabil	litv			
	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 Quali	ty Dotormi	notion	High	
Over all Quali	iy Deteriiii	เเลเเปน	man	

<sup>\*</sup> Related References: Primary Source: Hazelton Europe 1994

Study Citation: OECD Harmonized IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate. Water Solubility

Template:

**HERO ID:** 79051

	EXTRACTION
Parameter	Data
Water Solubility	8000 mg/L
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	no; not specified; NA
Solvent, Reactivity, Storage, and Stability	NR; NA; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Temperature	$20^{\circ}\mathrm{C}$
System	Not Reported
pН	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	slightly soluble in water, 8 g/L

Water Solubility

			EVALUATIO	N
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 Reliabilit	ty			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quality Determination			Low	

Study Citation: OECD Harmonized	NLM, (2015). Water Solubilit	PubChem: Hazardous substance data bank y	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
			EXTRACTIO	N.
Parameter		Data	EXTRACTIO	
Water Solubility		7820 mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage, and Stability		NR; NR; NR; NR		
Radiolabel, Source, State, and Purity		NR; NR; NR; NR		
Temperature		20°C		
System		Not Reported		
pH		Not reported		
Results Details Method		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
Domain 2. Test Kellauli	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	muit J.	(Method Objectivity)	Mediani	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 inclu-
				sion 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.
			1,71	o
<b>Overall Quali</b>	tv Determi	nation	High	
O Teran Quan	ij Determi		111811	

Water Solubility

<sup>\*</sup> Related References: European Chemicals Bureau. 2000. IUCLID Dataset, Tris (2-Chloroethyl) phosphate (2000-CD-Rom edition);

Study Citation: OECD Harmonized	NLM, (2015). I Water Solubility	PubChem: Hazardous substance data bank	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template:	water Solubilit	y		
HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data	EXTRACTIO	
Water Solubility		7000 mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
Temperature		Not Reported		
System		Not Reported		
pН		Not reported		
Results Details Method		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	ity			
	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 Qualit	v Determi	nation	High	

<sup>\*</sup> Related References: PhysProp. Muir, DCG 1984

**Overall Quality Determination** 

Study Citation: OECD Harmonized	U.S. EPA, (201 Water Solubilit	The state of the s	ormulation and	Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
Template: HERO ID:	4565574			
TIERO ID	1303371	1	EXTRACTIO	N
Parameter		Data	EATRACTIO	
Water Solubility		7820 mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; Not Reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR		
Radiolabel, Source, State,	and Purity	None; NR; liquid; NR		
Temperature		Not Reported		
System		Not Reported		
pH		Not Reported		
Results Details Method		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
			EVALUATIO	
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

High

Study Citation: OECD Harmonized	U.S. EPA, (2015 Water Solubility	). Flame retardants used in flexible polyur	rethane foam: A	An alternatives assessment update.
Template: HERO ID:	5113326			
HERO ID.	3113320		EVED ACTIO	AT
Parameter		Data	EXTRACTIO	N
1 at afficter		Data		
Water Solubility		= 7943 - mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; experimental; not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, and Purity		NR; NR; NR Notes: NR		
Temperature		not reported		
System		not reported		
рH		not reported		
Results Details Method		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	
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 Reliabil	lity			
	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 Qualit	ty Determin	nation	High	

<sup>\*</sup> Related References: Cited source - EC, 2000

Study Citation: OECD Harmonized	U.S. EPA, (2015) Water Solubility	5). Flame retardants used in flexible poly	rurethane foam: A	An alternatives assessment update.		
Template: HERO ID:	5113326					
			EXTRACTIO	N		
Parameter		Data				
Water Solubility		= 7820 - mg/L				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and		none; experimental; Directive 84/449/EF		ability method, 1984		
Solvent, Reactivity, Storage		NR; NR; NR	e, maior Bone	asing invitod, 1701		
Radiolabel, Source, State,	•	NR; NR; NR; NR Notes: NR				
Temperature		20°C				
System		not reported				
pH		pH 4.7 - 6.1				
Results Details Method		not reported				
Standard Deviation Results	S	not reported				
Results Details		GLP study				
			EVALUATIO			
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 Reliabil	lity					
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased		
		(Method Objectivity)		towards a particular product or outcome.		
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.		
Domain 3: Other						
Domain 5. Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are		
	Wettie 3.	Databases	High	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 Over	try Dotarras	nation	TT! ~1.			
Overall Quality	iy Determi	แลนงก	High			

<sup>\*</sup> Related References: Cited sources - EC, 2000 and EU, 2009; Also entered under HERO ID 5926126

Study Citation: OECD Harmonized Template:	U.S. EPA, (201 Water Solubility	5). Flame retardants used in flexible poly y	rurethane foam: A	An alternatives assessment update.		
HERO ID:	5113326					
			EXTRACTIO	N		
Parameter		Data				
Water Solubility		ca. 5000 - mg/L				
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate				
Confidentiality, Type, and	Guideline	none; experimental; Society of Automoti	ive Engineers (SAI	E) method		
Solvent, Reactivity, Storag		NR; NR; NR	υ .			
Radiolabel, Source, State, and Purity		NR; NR; NR Notes: NR				
Temperature		20°C				
System		not reported				
рH		5.5 -7				
Results Details Method		not reported				
Standard Deviation Result	S	not reported				
Results Details		Reported as 5 g/L				
			EVALUATIO	N		
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 Reliabi	lity					
	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.		
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		

**Overall Quality Determination** 

Metric 6:

Models

N/A

High

use OR includes references to the original sources.

Rating of this factor is not applicable to this kind of information.

<sup>\*</sup> Related References: Cited source - EC, 2000

Study Citation: OECD Harmonized	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. Water Solubility			
Template: HERO ID:	5113326			
TIERO ID:	3113320		EVED ACTIO	NT
Parameter		Data	EXTRACTIO	N
		Data		
Water Solubility		= 7000 - mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and Guideline		none; experimental; not reported		
Solvent, Reactivity, Storage, and Stability		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		not reported		
			EVALUATIO	N
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 Reliabil	it.			
Domain 2. Test Kenaon	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	Metric 3.	(Method Objectivity)	Medium	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.
Damain 2. Other				
Domain 3: Other	Metric 5:	Databases	Lligh	The information on data is from a recognized data collection/repository
	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.
	D.4		TT* 1	
Overall Quality Determination			High	

<sup>\*</sup> Related References: Cited source - ATSDR 2012 [primary: Muir DCG (1984) Phosphate esters. Handbook of Environmental Chemistry Anthropogenic Substances. Berlin, Germany: Springer-Berlag, 41-66.] Also entered under HERO ID 5926126 and 5926157

Study Citation: OECD Harmonized	U.S. EPA, (201 Water Solubility	9). Chemistry dashboard information for try	ris(2-chloroethy	vl) phosphate. 115-96-8
Template: HERO ID:	5926157			
ILIKO ID.	3,2013,		EXTRACTIO	N
Parameter		Data	EATRACTIO	
1 urumeter		Dutu		
Water Solubility		7000 mg/L		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not Reported		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Temperature		Not Reported		
System		Not Reported		
pH		NR		
Results Details Method		Not Reported		
Standard Deviation Results	s	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
	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 Quali	ty Determi	nation	High	

<sup>\*</sup> Related References: PhysProp. Muir, DCG 1984

<b>Study Citation:</b>			oodeman, A.,M, C	J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	esters, with pos Water Solubility	sible application as flame retardant.		
Template: HERO ID:	5349334	•		
		]	EXTRACTION	
Parameter		Data		
Water Solubility		5000 - mg/L		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; not specified		
Solvent, Reactivity, Storag	e, and Stability	tris(2-chloroethyl) phosphate; 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 Result	S	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 Reliabi	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Determi	nation	Medium	

<sup>\*</sup> Related References: Source cited: Hoechst AG (1986) in GDCh(1987)

Study Citation:		E.M., Rila, J. P., Traas, T. P., Posthuma sible application as flame retardant.	-Doodeman, A.,l	M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	Water Solubility			
Template: HERO ID:	5349334			
			EXTRACTIO	N
Parameter		Data		
Water Solubility		6000 - mg/L		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	none; not specified; not specified		
Solvent, Reactivity, Storago	e, and Stability	tris(2-chloroethyl) phosphate; NR; NR; l	NR	
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		not reported		
System		not reported		
pН		not reported		
Results Details Method		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	(Method Objectivity) Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
Zomam 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 Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Source cited: Brodsky et al. (1997) HERO ID 2131375

Study Citation:		E.M., Rila, J. P., Traas, T. P., Posthumasible application as flame retardant.	Doodeman, A.,l	M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	Water Solubility			
Template: HERO ID:	5349334			
			EXTRACTIO	N
Parameter		Data		
Water Solubility		7820 - mg/L		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		none; not specified; not specified		
Solvent, Reactivity, Storag	e, and Stability	tris(2-chloroethyl) phosphate; NR; NR; N	IR .	
Radiolabel, Source, State,	and Purity	NR; NR; NR Notes: NR		
Temperature		20°C		
System		not reported		
pН		not reported		
Results Details Method		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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 Quali	ty Determi	nation	High	

<sup>\*</sup> Related References: Hazelton (1994a) in European Commission (2004c); Also entered under HERO ID 5926126 and 3970179

Study Citation:			Doodeman, A.,l	M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	Water Solubility	sible application as flame retardant.		
Template:		•		
HERO ID:	5349334			
			<b>EXTRACTIO</b>	N
Parameter		Data		
Water Solubility		7000 - mg/L		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		none; not specified; not specified		
Solvent, Reactivity, Storage		tris(2-chloroethyl) phosphate; NR; NR; N	R	
Radiolabel, Source, State, a	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 Results Details	\$	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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 Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Source cited: Eldefrawi AT, Mansour NA, Brattsten LB, Ahrens VD, Lisk DJ. 1977. Further toxicological studies withcommercial and candidate flame retardant chemicals. Part II. Bull Environ Contam Toxicol 17: 720-726; Muir (1984); Also entered under HERO ID 5926157 and 5926126

Study Citation:			-Doodeman, A.,l	M, C.J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized Template:	Water Solubility	sible application as flame retardant. y		
HERO ID:	5349334			
			EXTRACTIO	N
Parameter		Data		
Water Solubility		7900 - mg/L		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		none; not specified; not specified		
Solvent, Reactivity, Storag	-	tris(2-chloroethyl) phosphate; NR; NR; N	NR	
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		20°C		
System		supersaturation over 20 °C, cooling, filtra	ition	
pH		not reported		
Results Details Method		not reported		
Standard Deviation Results	S	not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	lity			
	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:	(Method Objectivity) 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 Quali	ty Determi	nation	High	
	•		<u> </u>	

<sup>\*</sup> Related References: Source cited: Yoshioka et al. (1986a)

Study Citation:			oodeman, A.,M, C.	J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	esters, with pos Water Solubilit	ssible application as flame retardant.		
Template:				
HERO ID:	5349334			
		I	EXTRACTION	
Parameter		Data		
Water Solubility		8000 - mg/L		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		none; not specified; not specified		
Solvent, Reactivity, Storage		tris(2-chloroethyl) phosphate; NR; NR; NR		
Radiolabel, Source, State,		NR; NR; NR; NR Notes: NR		
Temperature	•	20°C		
System		not reported		
pН		not reported		
Results Details Method		not reported		
Standard Deviation Results	s	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 Reliabil	litv			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	Metric 4:	(Method Objectivity) Reliability/Analytical Method	Low	towards a particular product or outcome.  The analytical method is unknown and there is no indication that a reliable method was
	Meure 4.	Renability/Analytical Method	Low	used.
Domain 3: Other				
Domain J. Oute	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 Quali	tv Determi	ination	Medium	
	J	-		

<sup>\*</sup> Related References: Source cited: IPCS (1998)

Study Citation: OECD Harmonized	ECB, (2009). E Flash Point	European Union risk assessment report: Tri	s(2-chloroethyl) phos	sphate, TCEP. :213.
Template: HERO ID:	3809216			
			EXTRACTION	
Parameter		Data		
Flash Point		200 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; NR		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR		
System		NR		
Standard Deviation Results		NR		
Results Details		at 1013 hPa		
			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 Reliabil	ity			
	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 Qualit	y Determi	nation	Medium	

<sup>\*</sup> Related References: Primary Source: Courtaulds Chemicals 1996

Study Citation: OECD Harmonized	IPCS, (1998). I Flash Point	Flame retardants: Tris(chloropropyl) phosphato	e and tris(2-chlore	oethyl) phosphate.
Template:				
HERO ID:	79051			
		EX	TRACTION	
Parameter		Data		
Flash Point		202 C		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		No; not specified; Pensky Martin closed cup		
Solvent, Reactivity, Storag		NA; NA; NA		
Radiolabel, Source, State,	and Purity	NA; NA; liquid; NA		
System		Pensky Martin closed cup		
Standard Deviation Results	S	Not Reported		
Results Details		Not Reported		
		Ev	VALUATION	
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 Reliabil	litv			
	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				
Z oman S. Omer	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 Quali	ty Determi	nation	Medium	

Study Citation: OECD Harmonized	NCBI, (2020). Flash Point	PubChem database: Compound summary: '	Гris(2-chloroethyl) р	phosphate.
Template:	i mon i omit			
HERO ID:	6629833			
			EXTRACTION	
Parameter		Data		
Flash Point		450 F		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; not specified; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a	•	NR; NR; NR		
System		Not Reported		
Standard Deviation Results	3	Not reported		
Results Details		Data reported as 450 Fahrenheit which is a	pproximately 232 Cels	sius
			ENA E HARRION	
Domain			EVALUATION	Comments
Domain  Domain 1: Substance		Metric	Rating	Comments
Domain 1: Substance	Metric 1:	Representativeness	Цiah	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High N/A	Rating of this factor is not applicable to this kind of information.
	Metric 2.	Appropriatelless	IV/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliabil	ity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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				
Domain J. Outer	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 Qualit	ty Determi	nation	Medium	

<sup>\*</sup> Related References: CAMEO Chemicalshttps://cameochemicals.noaa.gov/chemical/19995

Study Citation: OECD Harmonized	NCBI, (2020). Flash Point	PubChem database: Compound summary:	Tris(2-chloroethyl) p	phosphate.
Template: HERO ID:	6629833			
			EXTRACTION	
Parameter		Data		
Flash Point		202 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Closed Cup		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State,		NR; NR; NR; NR		
System	·	Not Reported		
Standard Deviation Results	s	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 Reliabil	lity			
	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 Quali	tv Determi	nation	Medium	

<sup>\*</sup> Related References: https://www.ilo.org/dyn/icsc/showcard.display?p\_version=2&p\_card\_id=1677

Study Citation: OECD Harmonized	NLM, (2015). P Flash Point	hubChem: Hazardous substance data bank:	Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
		I	EXTRACTIO	N
Parameter		Data		
Flash Point		216 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Cleveland open cup		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
System		Not Reported		
Standard Deviation Results	3	Not reported		
Results Details		Not reported		
		]	EVALUATIO	N .
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 Reliabil	lity			
	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	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 and includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

<sup>\*</sup> Related References: Lewis, R.J. Sr.; Hawley's Condensed Chemical Dictionary 15th Edition. John Wiley & Sons, Inc. New York, NY 2007., p. 1288

Study Citation: OECD Harmonized	NLM, (2015). I Flash Point	PubChem: Hazardous substance data bank	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
TIERO ID.	3920120			
Parameter		Data	EXTRACTIO	N
r ai ainetei		Data		
Flash Point		232 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Closed Cup		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a	•	NR; NR; NR		
System		Not Reported		
Standard Deviation Results	S	Not reported		
Results Details		450 F		
			EVALUATIO	N
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 Reliabil	its			
Domain 2. Test Kenaon	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	wieure 3.	(Method Objectivity)	Wicaram	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				
Domain 5: 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 and includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Sigma-Aldrich; Material Safety Data Sheet for Tris(2-chloroethyl) Phosphate. Product Number: 119660, Version 4.7 (Revision Date 07/01/2014). Available from, as of October 8, 2014: http://www.sigmaaldrich.com/safety-center.html

Study Citation: OECD Harmonized	RSC, (2019). C Flash Point	ChemSpider: Tris(2-chloroethyl) phosphate.		
Template: HERO ID:	5926273			
			EXTRACTION	
Parameter		Data		
Flash Point		222 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
System		Not Reported		
Standard Deviation Results	3	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 Reliabil	ity			
	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 Qualit	tv Determi	nation	Medium	

<sup>\*</sup> Related References: LabNetwork

Study Citation:			c and orthocarbo	onic acid, organic phosphorous, monocarboxylic halogenated acids, haloalcohols,
OECD Harmonized	and organic silic Flash Point	on. :353-424.		
Template:				
HERO ID:	5332876			
			EXTRACTIO	N
Parameter		Data		
Flash Point		232 C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR		
System		Not reported		
Standard Deviation Results		Not reported		
Results Details		Not reported		
			EVALUATIO	N
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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 data collection that is prepared by experts in the field.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	ty Determii	nation	High	

Study Citation: OECD Harmonized	U.S. EPA, (2015) Flash Point	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. Flash Point			
Template: HERO ID:	5113326				
			EXTRACTIO	N	
Parameter		Data			
Flash Point		= 200 - C			
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate			
Confidentiality, Type, and	Guideline	Not Reported; Experimental; ASTM D9:			
Solvent, Reactivity, Storage		NR; NR; NR			
Radiolabel, Source, State, a		NR; NR; NR Notes: NR			
System	•	not reported			
Standard Deviation Results	;	not reported			
Results Details		sample appears to catch fire at approx. 2	00°C, but does not	show a distinct flash point as defined by the test method	
			EVALUATIO	N	
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 Reliabil	ity				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.	
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.	
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 Qualit	ty Determi	nation	High		

<sup>\*</sup> Related References: Source cited - EC, 2000 and EU, 2009

Study Citation: OECD Harmonized Template:	U.S. EPA, (201: Flash Point	5). Flame retardants used in flexible polyure	ethane foam: A	An alternatives assessment update.
HERO ID:	5113326			
		I	EXTRACTIO	N
Parameter		Data		
Flash Point		= 252 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	Not Reported; Experimental; open cup		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR Notes: NR		
System		not reported		
Standard Deviation Results		not reported		
Results Details		non-GLP		
		]	EVALUATIO	N .
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
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 Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Source cited - EC, 2000

Study Citation: OECD Harmonized	U.S. EPA, (2015) Flash Point	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. Flash Point		
Template:				
HERO ID:	5113326			
			EXTRACTIO	N
Parameter		Data		
Flash Point		= 216 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	Not Reported; Experimental; not reported	d	
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR Notes: NR		
System		not reported		
Standard Deviation Results		not reported		
Results Details		not reported		
			EVALUATIO	N
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 Reliabil	ity			
	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 Qualit	ty Determin	ation	High	

<sup>\*</sup> Related References: Source cited - ATSDR 2012

Study Citation: OECD Harmonized	U.S. EPA, (201: Flash Point	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update. Flash Point			
Template: HERO ID:	5113326				
			EXTRACTIO	N	
Parameter		Data			
Flash Point		225 C			
CASRN and Test Material		= 225 - C 115-96-8; Tris(2-chloroethyl) phosphate			
Confidentiality, Type, and		Not Reported; Experimental; DIN 51758		in.	
Solvent, Reactivity, Storag		NR; NR; NR	inethod, closed ct	P	
Radiolabel, Source, State,		NR; NR; NR; NR Notes: NR			
System	and I arrey	not reported			
Standard Deviation Results	S	not reported			
Results Details		not reported			
ъ.		24.4	EVALUATIO		
Domain  Domain 1: Substance		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.	
			8		
Domain 2: Test Reliabil	lity				
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased	
	Metric 4:	(Method Objectivity)	High	towards a particular product or outcome.	
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted 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.	
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.	
Overall Quali	ty Determi	nation	High		

<sup>\*</sup> Related References: Source cited - EC, 2000

Study Citation: OECD Harmonized	ECB, (2009). E Autoflammabili	European Union risk assessment report: Tri	s(2-chloroethyl) phos	sphate, TCEP. :213.
Template:	Autonammaom	пу		
HERO ID:	3809216			
			EXTRACTION	
Parameter		Data		
Auto-flammability		480 - C		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
System		NR		
Standard Deviation Result	s	NR		
Results Details		NR		
Results Value		NR		
			EVALUATION	
Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliabil	lity			
	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 Quali	ty Determi	nation	Medium	

<sup>\*</sup> Related References: Hoechst AG 1994

<b>Study Citation:</b>		PubChem database: Compound summa	ry: Tris(2-chloroethyl) p	phosphate.
OECD Harmonized Template:	Autoflammabil	ity		
HERO ID:	6629833			
			EXTRACTION	
Parameter		Data		
Auto-flammability		480 C		
CASRN and Test Material		115-96-8; TCEP		
Confidentiality, Type, and	Guideline	None; Experimental; Not specified		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
System		Not reported		
Standard Deviation Results	s	Not reported		
Results Details		Not Reported		
Results Value		Not Reported		
			EVALUATION	
Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliabil	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Determi	nation	Medium	

<sup>\*</sup> Related References: ILO International Chemical Safety Cards (ICSC)

Study Citation: OECD Harmonized	NCBI, (2020). Autoflammabil	PubChem database: Compound summarity	ry: Tris(2-chloroethyl) p	phosphate.
Template: HERO ID:	6629833			
			EXTRACTION	
Parameter		Data		
Auto-flammability		1115 F		
CASRN and Test Material		115-96-8; TCEP		
Confidentiality, Type, and	Guideline	None; Experimental; Not specified		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
System		Not reported		
Standard Deviation Results	S	Not reported		
Results Details		Not Reported		
Results Value		Not Reported		
			EVALUATION	
Domain		Metric	Rating	Comments
Domain 1: Substance			-	
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliabil	lity			
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Quali	ty Determi	ination	Medium	

<sup>\*</sup> Related References: National Toxicology Program, Institute of Environmental Health Sciences, National Institutes of Health (NTP). 1992. National Toxicology Program Chemical Repository Database. Research Triangle Park, North Carolina.

Study Citation: OECD Harmonized Femplate:	Viscosity Viscosity	). Keaxys: pnysical-chemical property data	10r 1f1s(2-chlc	proethyl) phosphate. CAS Registry Number: 115-96-8
HERO ID:	5926432			
			EXTRACTIO	N
Parameter		Data		
Viscosity		35.7 - 42.9		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State,	-	NR; NR; NR; NR		
Temperature	•	20-25°C		
Test Conditions		Not Reported		
Standard Deviation Results	s	Not Reported		
Results Details		2 values were reported: 0.357 P at 25°C an	ad 0.429 P at 20°	C.
			EVALUATIO	N
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 Reliabil	lity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	(Method Objectivity) 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 Quali	tv Determi	nation	High	

<sup>\*</sup> Related References: Burger; Wagner; Journal of Chemical and Engineering Data; vol. 3; (1958); p. 310; Jones et al.; Journal of the Chemical Society; (1946); p. 826

Study Citation: OECD Harmonized	IPCS, (1998). I Viscosity	Flame retardants: Tris(chloropropyl) phosph	hate and tris(2-	chloroethyl) phosphate.
Template:				
HERO ID:	79051			
			<b>EXTRACTIO</b>	N
Parameter		Data		
Viscosity		34		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	no; not specified; NA		
Solvent, Reactivity, Storage		NA; NA; NA		
Radiolabel, Source, State, a		NA; NA; liquid; NA		
Temperature	•	25°C		
Test Conditions		Not Reported		
Standard Deviation Results	S	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.
Overall Qualit	tv Determi	nation	Low	

Study Citation: OECD Harmonized	NLM, (2015). I Viscosity	PubChem: Hazardous substance data bank	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template:	•			
HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data		
Viscosity		45		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Temperature		20°C		
Test Conditions		Not Reported		
Standard Deviation Results	S	Not Reported		
Results Details		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
	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 Quali	tv Determi	nation	High	

<sup>\*</sup> Related References: IARC. 1990. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Geneva: World Health Organization, International Agency for Research on Cancer. p. V48 110.

Study Citation: OECD Harmonized	Elsevier, (2019) Refractive Inde		ta for Tris(2-chlo	proethyl) phosphate. CAS Registry Number: 115-96-8
Template:	Kenactive inde	A		
HERO ID:	5926432			
			EXTRACTIO	N
Parameter		Data		
Refractive Index		1.4707 - 1.4786		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a		NR; NR; NR; NR		
Temperature	·	20-25°C		
System		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		20-25°C; 13 values were reported in Rea	axys; 12 values we	re reported in the range of 1.4707 to 1.4786 at 20-25C; 1 value was measured at non-
		standard temperature.		
Results Details Methods		Not Reported		
Parameter		Not Reported		
			EVALUATIO	N .
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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)		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 Qualit	ty Determi	nation	High	

<sup>\*</sup> Related References: Data range determined from multiple primary sources in REAXYS.

**Study Citation: OECD Harmonized**  Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542.

Refractive Index

Template:

**HERO ID:** 5349311

	F	EXTRACTIO	N
Parameter	Data	MINACIIO	
Refractive Index	1.4721		
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State, and Purity	NR; NR; NR; NR		
Temperature	20°C		
System	Not Reported		
Standard Deviation Results	Not Reported		
Results Details	Not Reported		
Results Details Methods	Not Reported		
Parameter	Not Reported		
		EVALUATIO:	
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	Medium	There is no indication that the methodology for producing the information was biased
wiedle 3.	(Method Objectivity)	McGiulli	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 inclu-
Trictle 1.	Tomasmy/Timiyusur Moulou	1,10dfdfff	sion in a peer-reviewed/recognized database or other secondary source.
D : 1 01			
Domain 3: Other	D . 1	TT: 1	
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 Determ	ination	High	

**Study Citation: OECD Harmonized**  IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate. Refractive Index

		EXTRACTIO	N
Parameter	Data	EATRACIIO	14
Refractive Index	1.4721		
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and Guideline	no; Not Reported; NA		
Solvent, Reactivity, Storage, and Stability	NA; NA; NA; NA		
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA		
Temperature	20°C		
System	NA		
Standard Deviation Results	Not Reported		
Results Details	Not Reported		
Results Details Methods	Not Reported		
Parameter	Not Reported		
		EVALUATIO	
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	Medium	There is no indication that the methodology for producing the information was biased
	(Method Objectivity)		towards a particular product or outcome.
Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was
			used.
Domain 3: Other			
Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown sec-
			ondary 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.

Study Citation: OECD Harmonized	NLM, (2015). P Refractive Index	ubChem: Hazardous substance data bank	: Tris(2-chloroe	thyl) phosphate, 115-96-8.
Template: HERO ID:	5926126			
			EXTRACTIO	N
Parameter		Data		-
Refractive Index		1.4721		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storage	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR		
Temperature		20°C		
System		Not Reported		
Standard Deviation Results	S	Not Reported		
Results Details		Not Reported		
Results Details Methods		Not Reported		
Parameter		Not Reported		
			EVALUATIO	N
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 Reliabil	lity			
	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 Quali	ty Determi	nation	High	

<sup>\*</sup> Related References: Haynes, W.M. (Ed.) CRC Handbook of Chemistry and Physics. 95th Edition. CRC Press LLC, Boca Raton. P. 3-542.

Study Citation: OECD Harmonized	RSC, (2019). C	ChemSpider: Tris(2-chloroethyl) phosphate	2.	
Template:	Remactive mac	A.		
HERO ID:	5926273			
			EXTRACTION	
Parameter		Data	EATRACTION	
		Dutu		
Refractive Index		1.472		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Experimental; Not reported		
Solvent, Reactivity, Storag		NR; NR; NR		
Radiolabel, Source, State,	-	NR; NR; NR; NR		
Temperature	•	Not Reported		
System		Not Reported		
Standard Deviation Result	s	Not Reported		
Results Details		Not Reported		
Results Details Methods		Not Reported		
Parameter		Not Reported		
			<b>EVALUATION</b>	
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 Reliabil	lity			
2 100 1010	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
	1.100110 01	(Method Objectivity)	1110010111	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				
Domain 3. Outer	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 Ovel	ty Dotomos	nation	Medium	
Overall Quali	ty Determi	เมลนบน	Medium	

<sup>\*</sup> Related References: Parchem-fine & specialty chemicals

Study Citation: OECD Harmonized	Ekpe, O. D., Ch Henry's Law	oo, G., Barceló, D., Oh, J. E. (2020). Cha	pter One - Introduction	on of emerging halogenated flame retardants in the environment. 88:1-39.
Femplate:	Tiemy 5 Law			
HERO ID:	8775306			
			EXTRACTION	
Parameter		Data		
. , ,		1.675.7		
Henry's Law CASRN and Test Material		1.67E-7 - atm m^3/mol		
	Suidalina	115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C		None; Not specified; NR		
Solvent, Reactivity, Storage Radiolabel, Source, State, a		NR; NR; NR; NR NR; NR; NR Notes: NR		
	ind Purity	25 C		
Геmperature oH		NR		
System		NR		
System 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 Reliabil	itv			
	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.

<sup>\*</sup> Related References: Cites EPI Suite and secondary source I. Pantelaki, D. Voutsa, Organophosphate flame retardants (OPFRs): a review on analytical methods and occurrence in wastewater and aquatic environment, Sci. Total Environ. 649 (2019) 247–263. (HEROID unknown).

**Overall Quality Determination** 

Study Citation: OECD Harmonized Template:	IPCS, (1998). F Henry's Law	Flame retardants: Tris(chloropropyl) phosp	ohate and tris(2-o	chloroethyl) phosphate.
HERO ID:	79051			
			EXTRACTIO	N
Parameter		Data		
Henry's Law		$3.29 \times 10-6$		
CASRN and Test Material		115-96-8; tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Guideline	no; not specified; NA		
Solvent, Reactivity, Storage	e, and Stability	NA; NA; NA; NA		
Radiolabel, Source, State, a	and Purity	NA; NA; liquid; NA		
Temperature		Not Reported		
pH		Not Reported		
System		Not Reported		
Standard Deviation Results		Not Reported		
Results Details		Not Reported		
Results Details Methods		Not Reported		
			EVALUATIO	N N
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 Reliabil	itv			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)	1.10010111	towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Low

Study Citation:		E.M., Rila, J. P., Traas, T. P., Posthumasible application as flame retardant.	Doodeman, A.,M, C.	J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	Henry's Law	sible application as name retardant.		
Template:	, , , , , , , , , , , , , , , , , , ,			
HERO ID:	5349334			
			EXTRACTION	
Parameter		Data		
Henry's Law		8.07E-03 Pa. m3/mol		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and		none; not reported; Not Reported		
Solvent, Reactivity, Storage	-	NR; NR; NR; NR		
Radiolabel, Source, State, a	and Purity	NR; NR; NR; NR Notes: NR		
Temperature		25°C		
pН		not reported		
System		not reported		
Standard Deviation Results	3	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 Reliabil	ity			
	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 Qualit	ty Determi	nation	Medium	

<sup>\*</sup> Related References: IPCS (1998)

Study Citation:			Doodeman, A.,M, C.	J., Posthumus, R. (2005). Environmental risk limits for several phosphate
OECD Harmonized	Henry's Law	sible application as flame retardant.		
Template:	,			
HERO ID:	5349334			
			EXTRACTION	
Parameter		Data		
Hoppy's Low		4.16E-05 Pa. m3/mol		
Henry's Law CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and C	Suidalina	none; not reported; not reported		
Solvent, Reactivity, Storage		NR; NR; NR		
Radiolabel, Source, State, a		NR; NR; NR; NR Notes: NR		
Temperature	and I drity	not reported		
рН		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 Reliabil	ity			
	Metric 3:	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
		(Method Objectivity)	_	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				
Domain 5: Other	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are
			11.5	peer-reviewed by experts in the field, are broadly available to the public for review and
	Metric 6:	Models	N/A	use, Rating of this factor is not applicable to this kind of information.
Overall Qualit	ty Determi	nation	Medium	

<sup>\*</sup> Related References: European Commission (2004c)

OECD Harmonized Heavy's Law 5349334    Parameter	Study Citation:			Doodeman, A.,M, C.	J., Posthumus, R. (2005). Environmental risk limits for several phosphate
TERRO ID: 5349334  Parameter Data  LSE-OS Pa. m-3/mol  LSE-OS Pa.	OECD Harmonized		ssible application as flame retardant.		
Parameter  Data    Henry's Law	_	-			
Personne	HERO ID:	5349334			
Henry's Law  CASRN and Test Material  Confidentiality, Type, and Guideline Solvent, Reactivity, Storage, and Stability Solvent, Reactivity, Storage, and Stability Solvent, Reactivity, Storage, and Stability NR; NR; NR; NR NR SNR; NR; NR NR NR; NR; NR NR NR; NR; NR NR NR; NR; NR NR System  Ont reported  Standard Deviation Results  not reported  not reported  Results Details Results Details Methods  Domain  Metric 1:  Representativeness Metric 2:  Representativeness High Metric 3:  Reliability/Mnbiased (Method Objectivity) Metric 4:  Reliability/Analytical Method  Domain 3: Other  Metric 5:  Databases  High Metric 5:  Metric 6:  Models  N/A  Rating of this factor is not applicable to this kind of information.				EXTRACTION	
CASRN and Test Material Confidentiality, Type, and Guideline Solvent, Reactivity, Storage, and Stability Radiolabel, Source, State, and Purity Temperature PH	Parameter		Data		
CASRN and Test Material Confidentiality, Type, and Guideline Solvent, Reactivity, Storage, and Stability Radiolabel, Source, State, and Purity Temperature PH	Henry's I aw		1 5F-05 Pa m3/mol		
Confidentiality, Type, and Guideline Solvent, Reactivity, Storage, and Stability NR; NR; NR; NR NR NR; NR; NR; NR Netes: NR Agadiolabel, Source, State, and Purity Temperature 20°C pH not reported not reported Standard Deviation Results not reported Results Details not reported Results Details Results Details Results Details Metric 1: Metric 1: Appropriateness Metric 2: Appropriateness Metric 2: Appropriateness Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5:  Metric 5:  Models  Metric 6:  Models  NR; NR; NR; NR Networks: NR NR; NR; NR; NR NR NR; NR; NR; NR NR; NR; NR NR; NR; NR; NR NR; NR; NR; NR NR; NR; NR; NR NR; NR; NR; NR; NR NR; NR; NR; NR; NR; NR; NR NR; NR; NR; NR; NR; NR; NR; NR NR;	•				
Solvent, Reactivity, Storage, and Stability Radiolabel, Source, State, and Purity Radiolabel, Source, State, and Purity Pemperature 20°C pH not reported System not reported Standard Deviation Results not reported Results Details Results Details Results Details Results Details Methods Netric 1: Representativeness Metric 2: Appropriateness  Metric 2: Appropriateness  Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5:  Metric 5:  Metric 5:  Metric 6: Models  Metric 6: Models  Metric 6: Models  N/A Rating of this factor is not applicable to this kind of information.		Guideline			
Radiolabel, Source, State, and Purity Temperature PH not reported System not reported Standard Deviation Results Results Details Methods  Domain 1: Substance Metric 2: Appropriateness Metric 2: Appropriateness  Reliability/Unbiased (Method Objectivity) Reliability/Analytical Method  Domain 3: Other  Metric 5:  Databases  Metric 6: Models  Not reported  Not reported  Results Details Methods  Results Details Methods  Not reported  Results Details Methods  Results Details Methods  Results Details Methods  Not reported  Results Details Methods  Netric 1: Representativeness High Measured data are consistent with the subject chemical substance. Metric 4: Reliability/Unbiased (Method Objectivity) Reliability/Analytical Method  Netric 4: Note of the state of the subject demical substance structural features.  Netric 5: Databases  Note of the state of the subject demical substance and the methodology for producing the information was biased towards a particular product or outcome. The analytical method is unknown and there is no indication that a reliable method was used.  Note of the state of this field, are broadly available to the public for review and use,  Metric 5:  Note of the state of this kind of information.					
Temperature pH not reported not reported System not reported Standard Deviation Results Details not reported not reported not reported standard Deviation Results Details not reported not			NR; NR; NR; NR Notes: NR		
pH System not reported System not reported System not reported Results Details Results Details Methods  Domain  Metric 1: Appropriateness  Metric 2: Appropriateness  Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Metric 5: Databases  Metric 5:  Databases  Metric 6: Models  N/A  Rating of this factor is not applicable to this kind of information.  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.		•			
System not reported not reported not reported not reported not reported Results Details Methods not reported Pevaluation Results Details Methods not reported Pevaluation Results Details Methods not reported Pevaluation Results Details Methods Rating Comments    Domain 1: Substance			not reported		
Results Details Methods not reported not rep			not reported		
Results Details Methods  Domain  Domain  Metric  Representativeness Appropriateness  Metric 2: Appropriateness  Metric 3: Reliability/Unbiased (Method Objectivity) Aptric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5: Databases  Netric 6: Models  Models  EVALUATION Rating  Comments  Comments  Comments  Data are measured or estimated for the subject chemical substance. Measured data are consistent with the subject chemical substance structural features.  Measured data are consistent with the subject chemical substance of the towards a particular product or outcome. There is no indication that the methodology for producing the information was biased towards a particular product or outcome. 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.	Standard Deviation Results	S	not reported		
Domain 1: Substance  Metric 1: Representativeness High Measured data are consistent with 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) Metric 4: Reliability/Analytical Method  Low There is no indication that the methodology for producing the information was biased towards a particular product or outcome.  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.	Results Details		not reported		
Domain 1: Substance Metric 1: Representativeness High Measured or estimated for the subject chemical substance. Metric 2: Appropriateness High Measured data are consistent with the subject chemical substance.  Domain 2: Test Reliability  Metric 3: Reliability/Unbiased (Method Objectivity) 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.	Results Details Methods		not reported		
Domain 1: Substance Metric 1: Representativeness High Measured or estimated for the subject chemical substance. Metric 2: Appropriateness High Measured data are consistent with the subject chemical substance.  Domain 2: Test Reliability  Metric 3: Reliability/Unbiased (Method Objectivity) 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.				FVALUATION	
Metric 1: Representativeness High Measured or estimated for the subject chemical substance. High Measured data are consistent with the subject chemical substance structural features.  Domain 2: Test Reliability  Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Metric 4: Reliability/Analytical Method  Metric 5: Databases  High Measured data are consistent with the subject chemical substance structural features.  Medium There is no indication that the methodology for producing the information was biased towards a particular product or outcome.  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.	Domain		Metric		Comments
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)  Metric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5: Databases  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.	Domain 1: Substance				
Domain 2: Test Reliability  Metric 3: Reliability/Unbiased (Method Objectivity)  Metric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5: Databases  Metric 6: Models  Medium  There is no indication that the methodology for producing the information was biased towards a particular product or outcome.  The analytical method is unknown and there is no indication that a reliable method was used.  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.		Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5: Databases  Medium Metric 6: Models  Reliability/Unbiased (Method Objectivity) Low The analytical method is unknown and there is no indication that a reliable method was used.  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.		Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Metric 3: Reliability/Unbiased (Method Objectivity) Metric 4: Reliability/Analytical Method  Domain 3: Other  Metric 5: Databases  Medium Metric 6: Models  Reliability/Unbiased (Method Objectivity) Low The analytical method is unknown and there is no indication that a reliable method was used.  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.	Domain 2: Test Reliabil	lity			
Metric 4: (Method Objectivity) 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.	2 cmain 2. Test renden	-	Reliability/Unbiased	Medium	There is no indication that the methodology for producing the information was biased
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.		medie 3.	<del>_</del>	Mediani	
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.		Metric 4:		Low	The analytical method is unknown and there is no indication that a reliable method was
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.	Domain 3: Other				
Metric 6: Models N/A Rating of this factor is not applicable to this kind of information.	Domain 3. Other	Metric 5:	Databases	High	
Metric 6: Models N/A Rating of this factor is not applicable to this kind of information.					
Overall Quality Determination Medium		Metric 6:	Models	N/A	
Overan Quanty Determination Medium	Overall Quali	ty Determi	ination	Medium	

<sup>\*</sup> Related References: GDCh (Gesellschaft Deutscher Chemiker - Advisory Committee on Existing Chemicals of EnvironmentalRelevance (BUA)). 1987. Tris(2-chloroethyl) phosphate. Beratergremium Für Umweltrelevante Altstoffe (BUA), Vol. 20. Weinheim, Germany: VCH.

Study Citation: OECD Harmonized	Ekpe, O. D., Ch Other Propertie	-	oter One - Introduction	on of emerging halogenated flame retardants in the environment. 88:1-39.
Template: HERO ID:	8775306			
			EXTRACTION	
Parameter		Data		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Not specified; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Results Value		Log Kaw = -3.871		
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 Reliabil	lity			
	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 Quali	ty Determi	nation	Medium	

<sup>\*</sup> Related References: Cites EPI Suite and secondary source I. Pantelaki, D. Voutsa, Organophosphate flame retardants (OPFRs): a review on analytical methods and occurrence in wastewater and aquatic environment, Sci. Total Environ. 649 (2019) 247–263. (HEROID unknown).

Study Citation: OECD Harmonized	Ekpe, O. D., Ch Other Propertie		pter One - Introducti	on of emerging halogenated flame retardants in the environment. 88:1-39.
Template: HERO ID:	8775306			
			EXTRACTION	
Parameter		Data		
CASRN and Test Material		115-96-8; Tris(2-chloroethyl) phosphate		
Confidentiality, Type, and	Guideline	None; Not specified; NR		
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR; NR		
Radiolabel, Source, State,	and Purity	NR; NR; NR; NR Notes: NR		
Results Value		Log Koa = 5.311		
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 Reliabil	lity			
	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 Quali	ty Determi	nation	Medium	

<sup>\*</sup> Related References: Cites EPI Suite and secondary source I. Pantelaki, D. Voutsa, Organophosphate flame retardants (OPFRs): a review on analytical methods and occurrence in wastewater and aquatic environment, Sci. Total Environ. 649 (2019) 247–263. (HEROID unknown).

Study Citation:	Okeme, J. O. (2018). Examining the gas-particle partitioning of organophosphate esters: How reliable are air measurements?. Environmental Technology 52(23):13834-13844.			phate esters: How reliable are air measurements?. Environmental Science &		
OECD Harmonized	Technology 52( Miscellaneous	23):13834-13844.				
Template:	Misceriancous					
HERO ID:	5165658					
		]	EXTRACTION			
Parameter		Data				
CASRN		115-96-8				
Confidentiality, Type, and	Guideline	No; calculation; NA				
Solvent, Reactivity, Storag		NR; NR; NR; NR				
Radiolabel, Source, State,	•	NR; NR; NR; NR Notes: NR				
Value	•	Not Reported				
Temperature		NA				
System		evaluation of measured and calculated data				
рH		NA				
Standard Deviation Results	S	NA NA				
Results Details		OPEs' and that the results are 'most likely particle fractions reported in other sources	influenced, in part, I ranged from 15 to	n air have likely mischaracterized the gas-particle partitioning of the more volatile by equilibrium sampling artifacts such as gas phase sorption to filters'. Measured >99% (Table S4). Estimated particle distribution were <5% using either Junge-FER model (approximate, based on figure S1). Log Koa reported in HERO ID		
			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 Reliabil	lity					
	Metric 3:	Reliability/Unbiased	High	The methodology for producing the information is designed to answer a specific ques-		
		(Method Objectivity)		tion, and the methodology's objective is clear.		
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.		
Domain 3: Other						
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.		
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.		
	ty Determi		Medium			

Study Citation:	Okeme, J. O., Rodgers, M., T.F., Parnis, J. M., Diamond, M. L., Bidleman, T. F., Jantunen, L. M. (2020). Gas chromatographic estimation of vapor pressures and octanol-air partition coefficients of semivolatile organic compounds of emerging concern. Journal of Chemical and Engineering Data 65(5):2467-2475.		
OECD Harmonized Miscellaneous		partition coefficients of semivorative organic compounds of emerging concern. Journal of Chemical and Engineering Data 03(3).2407-2473	
Template:			
HERO ID:	6967359		
		EXTRACTION	
Parameter		Data	
CASRN		115-96-8	
Confidentiality, Type, and Guideline		None; Experimental; Non-guideline: Gas chromatography retention time GC-RT method	
Solvent, Reactivity, Storag	e, and Stability	NR; NR; NR	
Radiolabel, Source, State, and Purity		NR; Accustandard; NR; 100% Notes: NR	
Value		7.85 - 7.93	
Temperature		estimated at 298K; experimental: 333-363 K (59.85-89.85°C)	
System		GC-RT assumes the chromatographic retention time is inversely proportional and proportional to its temperature dependent octanol—air partition coefficient (Koa)	
pH		Not reported	
Standard Deviation Result	s	$\pm 0.23$ (standard prediction uncertainty estimated at K = 298)	
Results Details		Log octanol—air partition coefficient (Koa) = 7.85 (calibrated) and 7.93 (uncalibrated)	

			<b>EVALUATIO</b>	N
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 Reliabi	ility			
	Metric 3:	Reliability/Unbiased	High	The methodology for producing the information is designed to answer a specific ques-
		(Method Objectivity)		tion, 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	High	The model had a defined, unambiguous endpoint; $r2 = 0.983$ .

**Study Citation:** Yaman, B., Dumanoglu, Y., Odabasi, M. (2020). Measurement and modeling the phase partitioning of organophosphate esters using their temperature-

dependent octanol-air partition coefficients and vapor pressures. Environmental Science & Technology 54(13):8133-8143.

**OECD Harmonized Template:** 

Miscellaneous

Results Details

HERO ID: 10064224

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EXTR	AC'I	'ION

Parameter	Data
CASRN	Not Reported
Confidentiality, Type, and Guideline	none; experimental; Log Koa generator column -retention time method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Value	log Koa 7.91
Temperature	25°C
System	Solutions run at chromatographic temperature range and retention times compared to 19 compounds
pH	not applicable
Standard Deviation Results	$\pm 0.35$

surrogate - TCEP-d12 log Koa = 7.86  $\pm$  0.35; results compared to several modeling systems

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 Reliabi	ility			
	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				

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 $\cdot$ m <sup>3</sup> /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 <sup>3</sup>	Grams per cubic centimeter	
GLP	Good Laboratory Practice	
HLC	Henry's Law Constant	
HPV	High Production Volume	
HSDB	Hazard Substance Data Bank	
ILO	International Labour Organization	
IPCS	International Programme on Chemical Safety	
IUCLID	International Uniform Chemical Information Database	
K	Kelvin	
Koa	Octanol-Air partition coefficient	
Kow	Octanol-Water partition coefficient	
mg/L	Milligrams per Liter	
mol	Mole	
mmHg	Millimeters of Mercury	
MS	Mass Spectrometry	
N/A	Not Applicable	
NICNAS	National Industrial Chemicals Notification and Assessment Scheme	
NLM	National Library of Medicine	
NR	Not Reported	
OECD	Organisation for Economic Co-operation and Development	
Pa (hPa)	Pascals (hectopascals; 1 hPa = 100 Pa)	
pH	Negative base 10 Log of Hydrogen Ion (H+) Concentration in Aque-	
	ous Solution	
pKa	Negative base 10 Log of Acid Dissociation Constant (Ka)	
RIVM	National Institute for Public Health and the Environment (Dutch: Ri-	
	jksinstituut voor Volksgezondheid en Milieu)	

Continued on next page ...
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## ... continued from previous page

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