United States
Environmental Protection Agency

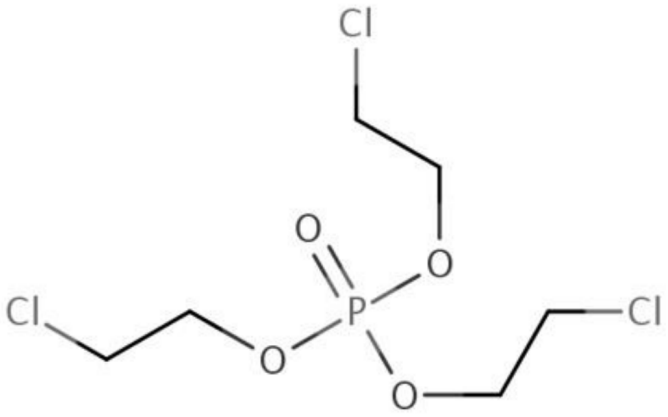
September 2024
Office of Chemical Safety and
Pollution Prevention

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



September 2024

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.

Table of Contents

Study Citation:	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.
OECD Harmonized Template:	Physical Form or State
HERO ID:	3981013

EXTRACTION

Parameter	**Data**
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Value	liquid
Results Details	not specified

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

⋆ Related References: primary reference not specified but include CRC (2009), HSDB (no date), Merck (2006), SAX (2012)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Physical Form or State
HERO ID:	3809216

EXTRACTION

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

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	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

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Physical Form or State
HERO ID:	79051

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; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA Notes: NA
Results Value	colorless to pale yellow liquid
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Low

Study Citation:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	Physical Form or State
HERO ID:	4565574

EXTRACTION

Parameter	**Data**
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	Not Reported; Not Reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR Notes: slight odor
Results Value	liquid
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features or other physical/chemical properties or behaviors.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	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

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926126

EXTRACTION

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; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Value	liquid
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926126

EXTRACTION

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; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details	clear, transparent liquid

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Physical Form or State
HERO ID:	5926126

EXTRACTION

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; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details	low odor

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.
OECD Harmonized Template:	Melting Point
HERO ID:	3981013

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	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 Quality Determination High

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

Study Citation:	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
OECD Harmonized Template:	Melting Point
HERO ID:	5160070

EXTRACTION

Parameter	**Data**
Melting Point	-55 - -60 °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 Notes: NR
Results Details Methods	NR
Standard Deviation Results	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Melting Point
HERO ID:	3809216

EXTRACTION

Parameter	**Data**
Melting Point	< -70 - °C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	No; Experimental; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Primary source Akzo Nobel 2000.

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Melting Point
HERO ID:	5926126

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

* Related References: 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, (2012). SIDS initial assessment profiles agreed in the course of the OECD HPV chemicals programme from 1993 to 2011.
OECD Harmonized Template:	Melting Point
HERO ID:	9641572

EXTRACTION

Parameter	**Data**
Melting Point	< -70 °C
CASRN and Test Material	115-96-8; tris(2-chloroethylphosphate)
Confidentiality, Type, and Guideline	None; Experimental; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — Medium

* Related References: No citation reported.

Study Citation:	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Melting Point
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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: LabNetwork

Study Citation:	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Melting Point
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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — Medium

* Related References: Parchem-fine & specialty chemicals

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 Template:	Melting Point
HERO ID:	5332876

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	Not reported
Standard Deviation Results	Not reported
Results Details	Melting point = -55°C

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	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 Determination High

Study Citation:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	Melting Point
HERO ID:	4565574

EXTRACTION

Parameter	**Data**
Melting Point	-55 °C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; Not Reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Melting Point
HERO ID:	5113326

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

* Related References: Source cited: OECD-SIDS, 2006

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Melting Point
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Melting Point	< -70 °C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; Experimental; not reported; pour point
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Cited sources - NICNAS, 2001; OECD-SIDS, 2006; EU, 2009

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Melting Point
HERO ID:	5113326

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Details Methods	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Sources cited: IARC, 1990; EC, 2000; ATSDR, 2012

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Melting Point
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Melting Point	ca. -60 °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 Notes: NR
Results Details Methods	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Cited source - EC (2000) IUCLID dataset

Study Citation:	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8..
OECD Harmonized Template:	Melting Point
HERO ID:	5926157

EXTRACTION

Parameter	**Data**
Melting Point	-35 °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
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

* Related References: PhysProp

Study Citation:	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8..
OECD Harmonized Template:	Melting Point
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Results Details Methods	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Medium

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

Study Citation:	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.
OECD Harmonized Template:	Boiling Point
HERO ID:	3981013

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Standard Deviation Results	not reported
Results Details	@ 760 mm Hg

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
OECD Harmonized Template:	Boiling Point
HERO ID:	5160070

EXTRACTION

Parameter	**Data**
Boiling Point	145 - 202 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 Notes: NR
Standard Deviation Results	NR
Results Details	66 - 1333 Pa

EVALUATION

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

Overall Quality Determination High

* Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Boiling Point
HERO ID:	3809216

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Standard Deviation Results	not reported
Results Details	Decomposition temperature 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	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Primary source Akzo Nobel 2000

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

EVALUATION

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

Overall Quality Determination High

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Boiling Point
HERO ID:	79051

EXTRACTION

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; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA Notes: NA
Standard Deviation Results	Not Reported
Results Details	at 760 mm Hg

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	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:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Boiling Point
HERO ID:	5926126

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

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Boiling Point
HERO ID:	5926273

EXTRACTION

Parameter	**Data**
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Standard Deviation Results	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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used
Domain 3: Other				
	Metric 5:	Databases	Medium	Data is from a publicly available secondary source with references to non-peer reviewed sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Parchem-fine & specialty chemicals

Study Citation:	Salthammer, T., Fuhrmann, F., Uhde, E. (2003). Flame retardants in the indoor environment – Part II: release of VOCs (triethylphosphate and halogenated degradation products) from polyurethane. Indoor Air 13(1):49-52.
OECD Harmonized Template:	Boiling Point
HERO ID:	4663142

EXTRACTION

Parameter	**Data**
Boiling Point	351 C
CASRN and Test Material	not reported; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Sigma-Aldrich, Deisenhofen, Germany; NR; GC quality Notes: NR
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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.

Overall Quality Determination Medium

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 Template:	Boiling Point
HERO ID:	5332876

EXTRACTION

Parameter	**Data**
Boiling Point	= 330 - C
CASRN and Test Material	115-98-6; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; not specified; Not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Standard Deviation Results	Not reported
Results Details	Boiling point = 330°C

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	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 Determination High

Study Citation:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	Boiling Point
HERO ID:	4565574

EXTRACTION

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, and Stability	NR; NR; NR; decomposition noted
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Standard Deviation Results	Not Reported
Results Details	Stability of C-Cl bond loss HCl begins 200° 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	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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Boiling Point
HERO ID:	5113326

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Standard Deviation Results	Not reported
Results Details	at 10 mmHg Measured by ASTM D1160 method at a reduced pressure

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Determination High

* Related References: Cited sources - EC, 2000

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Boiling Point
HERO ID:	5113326

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 Notes: NR
Standard Deviation Results	Not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Cited sources - IARC, 1990; Lide, 2008; ATSDR, 2012

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Boiling Point
HERO ID:	5113326

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; 99.5% Notes: NR
Standard Deviation Results	Not reported
Results Details	decomposes

EVALUATION

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

Overall Quality Determination — High

* Related References: Cited source - EU (2009)

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Boiling Point
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Boiling Point	= 145 - 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 Notes: NR
Standard Deviation Results	Not reported
Results Details	at 0 mmHg; Value reported as 145°C at 0.66 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	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination — High

* Related References: Cited sources - EC, 2000; NICNAS, 2001

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Boiling Point
HERO ID:	5113326

EXTRACTION

Parameter	Data
Boiling Point	>= 220 - 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 Notes: NR
Standard Deviation Results	Not reported
Results Details	Rapid decomposition occurs above 220°C. Thermal decomposition products are carbon monoxide, hydrogen chloride, 2-chloroethane and dichloroethane.

EVALUATION

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

Overall Quality Determination High

* Related References: Cited sources - IPCS, 1998

Study Citation:	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8..
OECD Harmonized Template:	Boiling Point
HERO ID:	5926157

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

EVALUATION

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

Overall Quality Determination High

* Related References: PhysProp

Study Citation:	DOE, (2016). Table 1: Chemicals of concern and associated chemical information. PACs.
OECD Harmonized Template:	Density
HERO ID:	3981013

EXTRACTION

Parameter	**Data**
Density	1.39 -
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Density Type	specific gravity (density of a substance divided by the density of water)
System	not specified
Temperature	25°C
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
OECD Harmonized Template:	Density
HERO ID:	5160070

EXTRACTION

Parameter	**Data**
Density	1.420 - g/cm3
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Experimental; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Density Type	Density
System	Not reported
Temperature	20 - 25 deg C
Standard Deviation Results	NR
Results Details	Reported as 1420 kg/m3

EVALUATION

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

Overall Quality Determination High

* Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Density
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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Density Type	density
System	Not reported
Temperature	25 deg C
Standard Deviation Results	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Primary Source: Akzo Nobel 2000

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Density
HERO ID:	79051

EXTRACTION

Parameter	**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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Density Type	specific gravity
System	Not Reported
Temperature	20°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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:	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 Template:	Density
HERO ID:	5332876

EXTRACTION

Parameter	**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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Density Type	density
System	Not reported
Temperature	not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	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 Determination High

Study Citation:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	Density
HERO ID:	4565574

EXTRACTION

Parameter	**Data**
Density	1.425 g/cm3
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; Not Reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Density Type	density
System	Not Reported
Temperature	25°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

Study Citation:	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8..
OECD Harmonized Template:	Density
HERO ID:	5926432

EXTRACTION

Parameter	**Data**
Density	1.42 - 1.4289 g/cm3
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	20-25°C
Standard Deviation Results	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.

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542.
OECD Harmonized Template:	Density
HERO ID:	5349311

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Density
HERO ID:	5926126

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

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

Study Citation:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Density
HERO ID:	6629833

EXTRACTION

Parameter	**Data**
Density	9.8
CASRN and Test Material	115-96-8; TCEP
Confidentiality, Type, and Guideline	None; Experimental; Not specified
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not reported
Temperature	Not Reported
Standard Deviation Results	Not reported
Results Details	Relative vapor density (air = 1)

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

⋆ 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

Study Citation:	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 Template:	Vapor Pressure
HERO ID:	2705112

EXTRACTION

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 Guideline	NR; Experimental; Non-guideline; gas chromatography retention time method
Solvent, Reactivity, Storage, and Stability	isooctane; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Sigma Aldrich Seelze, Germany; NR; 97% purity Notes: NR
Temperature	298.15
System	Subcooled liquid-phase vapor pressures using GC-RT; Approx. 2 ng Test substance in isooctane injected into DB-1 capillary column (1.0m× 0.25mmi.d., 0.25 μm film, J&W Scientific, USA) in Agilent 6890N GC-5973 MSD.
Standard Deviation Results	standard uncertainty 0.2 (p298/Pa)
Results Details	Also reported as log −1.32

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	Peer-reviewed journal article with results compared to other literature 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				
	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.

Overall Quality Determination High

* Related References: NA

Study Citation:	Dobry, A., Keller, R. (1957). Vapor pressures of some phosphate and phosphonate esters. Journal of Physical Chemistry 61(10):1448-1449.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5186315

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; Non-guideline study
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
System	Conventional isoteniscope with nitrogen atmosphere.
Standard Deviation Results	Not reported
Results Details	Thermal decomposition at 172°C reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question and the 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.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

Study Citation:	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5160070

EXTRACTION

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, Storage, 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	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	3809216

EXTRACTION

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, Storage, 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 Results	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: Primary Source: Akzo Nobel 2000

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	3809216

EXTRACTION

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, Storage, 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 Results	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Primary Source: Akzo Nobel 2000

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	79051

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Temperature	25°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Low

Study Citation:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	6629833

EXTRACTION

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, 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	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination High

* Related References: 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:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	6629833

EXTRACTION

Parameter	**Data**
Vapor Pressure	0.06 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

EVALUATION

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

Overall Quality Determination — High

* Related References: 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:	NIST, (2021). NIST Chemistry WebBook. Standard Reference Database No. 69. Tri(2-chloroethyl) phosphate (115-96-8).
OECD Harmonized Template:	Vapor Pressure
HERO ID:	10225164

EXTRACTION

Parameter	**Data**
Vapor Pressure	Not Reported
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	Not Reported; Not Reported; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	NR
System	Calculated from the vapor pressure data reported by the method of least squares
Standard Deviation Results	NR
Results Details	ΔH = 36.7 kJ/mol at 308K

EVALUATION

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

Overall Quality Determination High

⋆ Related References: Citing Stephenson and Malanowski, 1987. HERO ID 10284658 Based on data from 293-445K (Dykyj, 1972)

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5926126

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	25°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: Dobry, A; Keller, R. 1957. J Phys Chem 61: 1448-9.

Study Citation:	OECD, (2012). SIDS initial assessment profiles agreed in the course of the OECD HPV chemicals programme from 1993 to 2011.
OECD Harmonized Template:	Vapor Pressure
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, Storage, 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	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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: No citation reported.

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 Template:	Vapor Pressure
HERO ID:	6967359

EXTRACTION

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: Gas chromatography retention time GC-RT method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; Accustandard; NR; 100% Notes: TCEP
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 liquid-phase vapor pressure
Standard Deviation Results	±0.18 (standard prediction uncertainty estimated at K = 298)
Results Details	Calibrated Log10 Liquid-Phase Vapor Pressure = -1.25 (VP = 0.0562 Pa, ca. 4.2E-4 mm Hg); uncalibrated value Log10 Liquid-Phase Vapor Pressure = -1.43 Pa (VP = 0.03715 Pa, ca. 2.9E-4 mm Hg) (Average enthalpy of vaporization = 81.5±10 kJ/mol; HCB used as a reference compound)

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	High	The model had a defined, unambiguous endpoint; r2 = 0.978.

Overall Quality Determination High

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 Template:	Vapor Pressure
HERO ID:	5332876

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	145°C
System	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	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 Determination — High

Study Citation:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	4565574

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Temperature	Not Reported
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: 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:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Vapor Pressure	= 0.062 - mm Hg
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; calculation; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	25°C
System	Measured with a conventional isoteniscope using a nitrogen atmosphere
Standard Deviation Results	not reported
Results Details	Value calculated from reported equation coefficients determined by experimental 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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical method.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination — Uninformative

* Related References: Cited source - ATSDR, 2012

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Vapor Pressure	< 0.075 mm Hg
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; extrapolated; ASTM D232 method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	not reported
Standard Deviation Results	not reported
Results Details	Reported as <0.1 hPa at 20°C; approximated from data at higher temperatures.

EVALUATION

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

Overall Quality Determination High

* Related References: Cited source - EC, 2000 Iuclid dataset

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Vapor Pressure	= 1.6E-5 - mm Hg
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; extrapolated; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	25°C
System	not reported
Standard Deviation Results	not reported
Results Details	Values at higher temperatures measured by dynamic method; measured values reported as: 0.43 hPa at 136.9°C; 0.99 hPa at 143.5°C; 2.03 hPa at 158.6°C; 5.00 hPa at 174.1°C; 15.03 hPa at 196.2°C.

EVALUATION

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

Overall Quality Determination High

* Related References: Cited source - EU (2009)

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Vapor Pressure
HERO ID:	5113326

EXTRACTION

Parameter	Data
Vapor Pressure	= 8.55E-6 - mm Hg
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; extrapolated; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	not reported
Standard Deviation Results	not reported
Results Details	Reported as 0.00114 Pa at 20°C; 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.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Cited source - OECD-SIDS, 2006; EU, 2009

Study Citation:	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8..
OECD Harmonized Template:	Vapor Pressure
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

EVALUATION

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

Overall Quality Determination High

* Related References: PhysProp. Dobry, A and Keller, R 1957

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 Template:	Vapor Pressure
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 Guideline	Not Reported; not specified; NR
Solvent, Reactivity, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	Not Reported
System	not reported
Standard Deviation Results	not reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Citing Brodsky et al. (1997) HERO ID 2131375; not entered into Distiller.

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 Template:	Vapor Pressure
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, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	20 deg C
System	not reported
Standard Deviation Results	not reported
Results Details	Reported as 2.7 at 90ºC; 0.25 at 70ºC; 0.082 at 60ºC; 0.017 at 46ºC 3.7 E-04 at 20ºC and extrapolated 7.9E-04 at 25ºC

EVALUATION

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

Overall Quality Determination Medium

* 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 Template:	Vapor Pressure
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, Storage, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	Not Reported
System	not reported
Standard Deviation Results	not reported
Results Details	Typo in report 67 at 145 25 ºC; 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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	N/A	Rating of this factor is not applicable to this kind of information.
Domain 3: Other				
	Metric 5:	Databases	Medium	The data are from a source that is known but is missing elements required for High designation such as peer-review, public availability, or the inclusion of references to original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Citing Muir 1984, HERO ID 4198360.

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 Template:	Vapor Pressure
HERO ID:	5349334

EXTRACTION

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, and Stability	Not Reported; Not Reported; Not Reported; Not Reported
Radiolabel, Source, State, and Purity	Not Reported; Not Reported; Not Reported; Not Reported
Temperature	25ºC
System	not reported
Standard Deviation Results	not reported
Results Details	8.22 Pa (extrapolated; isoteniscope)

EVALUATION

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

Overall Quality Determination High

* Related References: Dobry & Keller (1957)

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:	Vapor Pressure
HERO ID:	10064224

EXTRACTION

Parameter	**Data**
Vapor Pressure	-1.32 log (Pa)
CASRN and Test Material	Not Reported; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; experimental; gas chromatographic retention times method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; NR; NR
Temperature	25°C
System	Solutions run at 5-8 temperatures and retention times compared to 3 reference compounds
Standard Deviation Results	$\pm$ 0.0032
Results Details	reported as log PL (Pa) = -1.32 ± 0.0032; surrogate TCEP-d12 = -1.26 ± 0.0041; results were compared to 3 other studies.

EVALUATION

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

Overall Quality Determination High

Study Citation:	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
OECD Harmonized Template:	logKow
HERO ID:	5160070

EXTRACTION

Parameter	**Data**
log k_{ow}	1.47 - 1.78
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Experimental; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; 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

EVALUATION

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

Overall Quality Determination High

* Related References: Cites: European Chemicals Bureau, IUCLID dataset 2000 (HEROID 5235795)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	logKow
HERO ID:	3809216

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	NR
System	NR
pH	NR
Results Details Method	NR
Standard Deviation Results	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Primary Source: Hazelton Europe 1994

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

EXTRACTION

Parameter	**Data**
log k_{ow}	1.63 -
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	25 C
System	NR
pH	NR
Results Details Method	NR
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Cites EPI Suite and secondary source 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:	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8..
OECD Harmonized Template:	logKow
HERO ID:	5926432

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	2 values were reported in Reaxys; Measured conditions were not reported.

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	logKow
HERO ID:	79051

EXTRACTION

Parameter	**Data**
log k_{ow}	1.7
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; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	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:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	logKow
HERO ID:	5926126

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available 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 Quality Determination High

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

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	logKow
HERO ID:	5926126

EXTRACTION

Parameter	**Data**
log k_{ow}	1.43
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
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical's physical/chemical properties.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	Analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	Data is from a publicly available 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 Quality Determination High

* 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:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	logKow
HERO ID:	4565574

EXTRACTION

Parameter	**Data**
log k_{ow}	1.78
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	logKow
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
log k_{ow}	= 1.7 -
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 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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

* Related References: Sources cited - IPCS, 1998; NICNAS, 2001

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	logKow
HERO ID:	5113326

EXTRACTION

Parameter	Data
log k_{ow}	= 1.78 -
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; experimental; Directive 84/449/EEC., A.8, Partition coefficient, 1984 Method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	GLP study

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

* Related References: Sources cited - EC, 2000; EU, 2009; also entered under HERO ID 5926126

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	logKow
HERO ID:	5113326

EXTRACTION

Parameter	Data
log k_{ow}	= 1.47 -
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; experimental; OECD Guide-line 107, Partition Coefficient (n-octanol/water), Flask-shaking Method, 1981
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

* Related References: Source cited - EC, 2000

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	logKow
HERO ID:	5113326

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

* 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:	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8..
OECD Harmonized Template:	logKow
HERO ID:	5926157

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: 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 esters, with possible application as flame retardant.
OECD Harmonized Template:	logKow
HERO ID:	5349334

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination Medium

* 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 esters, with possible application as flame retardant.
OECD Harmonized Template:	logKow
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
log k_{ow}	1.43 -
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; experimental; shake-flask
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination High

* Related References: Source cited: 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 esters, with possible application as flame retardant.
OECD Harmonized Template:	logKow
HERO ID:	5349334

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination — High

* Related References: Source cited: CITI (1992); also entered under HERO ID 5926157

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 Template:	logKow
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
log k_{ow}	1.48 -
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Source cited: Muir (1984)

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 Template:	logKow
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 Guideline	none; not specified; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Source cited: IPCS (1998) and Yoshioka et al. (1986)

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 Template:	logKow
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
log k_{ow}	1.78 -
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; experimental; shake-flask
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	Not reported
System	Not reported
pH	Not reported
Results Details Method	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination High

* Related References: Source cited: Hazelton (1994b) in EuropeanCommission (2004c)

Study Citation:	EC, (2009). Screening Assessment for the Challenge: Ethanol, 2-chloro-, phosphate (3:1) (Tris(2-chloroethyl) phosphate [TCEP]).
OECD Harmonized Template:	Water Solubility
HERO ID:	5160070

EXTRACTION

Parameter	**Data**
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20 C
System	NR
pH	NR
Results Details Method	NR
Standard Deviation Results	NR
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Water Solubility
HERO ID:	3809216

EXTRACTION

Parameter	**Data**
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; 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

EVALUATION

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

Overall Quality Determination High

* Related References: Primary Source: Hazelton Europe 1994

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Water Solubility
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; NR
Radiolabel, Source, State, and Purity	None; NR; liquid; NR
Temperature	20°C
System	Not Reported
pH	Not Reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	slightly soluble in water, 8 g/L

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Water Solubility
HERO ID:	5926126

EXTRACTION

Parameter	**Data**
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

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Water Solubility
HERO ID:	5926126

EXTRACTION

Parameter	**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; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	Not Reported
System	Not Reported
pH	Not reported
Results Details Method	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination — High

* Related References: PhysProp. Muir, DCG 1984

Study Citation:	U.S. EPA, (2015). TSCA Work Plan Chemical Problem Formulation and Initial Assessment. Chlorinated Phosphate Ester Cluster Flame Retardants.
OECD Harmonized Template:	Water Solubility
HERO ID:	4565574

EXTRACTION

Parameter	**Data**
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, and Stability	NR; 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

EVALUATION

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

Overall Quality Determination High

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Water Solubility
HERO ID:	5113326

EXTRACTION

Parameter	**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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

* Related References: Cited source - EC, 2000

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Water Solubility
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Water Solubility	= 7820 - mg/L
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; experimental; Directive 84/449/EEC, A.6, Water Solubility method, 1984
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	not reported
pH	pH 4.7 - 6.1
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	GLP study

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

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

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Water Solubility
HERO ID:	5113326

EXTRACTION

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 Automotive Engineers (SAE) method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20°C
System	not reported
pH	5.5 -7
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	Reported as 5 g/L

EVALUATION

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

Overall Quality Determination High

* Related References: Cited source - EC, 2000

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Water Solubility
HERO ID:	5113326

EXTRACTION

Parameter	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; 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

EVALUATION

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

Overall Quality Determination High

* Related References: 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:	U.S. EPA, (2019). Chemistry dashboard information for tris(2-chloroethyl) phosphate. 115-96-8..
OECD Harmonized Template:	Water Solubility
HERO ID:	5926157

EXTRACTION

Parameter	**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; 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	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination **High**

* Related References: PhysProp. Muir, DCG 1984

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 Template:	Water Solubility
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, Storage, and Stability	tris(2-chloroethyl) phosphate; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20ºC
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Source cited: Hoechst AG (1986) in GDCh(1987)

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 Template:	Water Solubility
HERO ID:	5349334

EXTRACTION

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, Storage, and Stability	tris(2-chloroethyl) phosphate; 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

EVALUATION

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

Overall Quality Determination High

* Related References: 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 esters, with possible application as flame retardant.
OECD Harmonized Template:	Water Solubility
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
Water Solubility	7820 - mg/L
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	tris(2-chloroethyl) phosphate; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20ºC
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

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

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 Template:	Water Solubility
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
Water Solubility	7000 - mg/L
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	tris(2-chloroethyl) phosphate; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20ºC
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

* Related References: 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:	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 Template:	Water Solubility
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
Water Solubility	7900 - mg/L
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	tris(2-chloroethyl) phosphate; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20ºC
System	supersaturation over 20 ºC, cooling, filtration
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

* Related References: Source cited: Yoshioka et al. (1986a)

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 Template:	Water Solubility
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
Water Solubility	8000 - mg/L
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not specified; not specified
Solvent, Reactivity, Storage, and Stability	tris(2-chloroethyl) phosphate; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20ºC
System	not reported
pH	not reported
Results Details Method	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Source cited: IPCS (1998)

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Flash Point
HERO ID:	3809216

EXTRACTION

Parameter	**Data**
Flash Point	200 - C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Experimental; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; 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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Primary Source: Courtaulds Chemicals 1996

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Flash Point
HERO ID:	79051

EXTRACTION

Parameter	**Data**
Flash Point	202 C
CASRN and Test Material	115-96-8; tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	No; not specified; Pensky Martin closed cup
Solvent, Reactivity, Storage, and Stability	NA; NA; NA; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA
System	Pensky Martin closed cup
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	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	Low	The data are from a primary source without expert peer-review or an unknown secondary source without peer-review and references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

Study Citation:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Flash Point
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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not reported
Results Details	Data reported as 450 Fahrenheit which is approximately 232 Celsius

EVALUATION

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

Overall Quality Determination Medium

* Related References: CAMEO Chemicalshttps://cameochemicals.noaa.gov/chemical/19995

Study Citation:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Flash Point
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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: https://www.ilo.org/dyn/icsc/showcard.display?p_version=2&p_card_id=1677

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Flash Point
HERO ID:	5926126

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	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.

Overall Quality Determination High

* 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:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Flash Point
HERO ID:	5926126

EXTRACTION

Parameter	**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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not reported
Results Details	450 F

EVALUATION

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

* 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:	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Flash Point
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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not Reported
Standard Deviation Results	Not reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: LabNetwork

Study Citation:	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 Template:	Flash Point
HERO ID:	5332876

EXTRACTION

Parameter	**Data**
Flash Point	232 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
System	Not reported
Standard Deviation Results	Not reported
Results Details	Not reported

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	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 Quality Determination High

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Flash Point
HERO ID:	5113326

EXTRACTION

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 D93 method
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
System	not reported
Standard Deviation Results	not reported
Results Details	sample appears to catch fire at approx. 200°C, but does not show a distinct flash point as defined by the test method

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

* Related References: Source cited - EC, 2000 and EU, 2009

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Flash Point
HERO ID:	5113326

EXTRACTION

Parameter	**Data**
Flash Point	= 252 - C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	Not Reported; Experimental; open cup
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
System	not reported
Standard Deviation Results	not reported
Results Details	non-GLP

EVALUATION

Domain	Metric		Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

* Related References: Source cited - EC, 2000

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Flash Point
HERO ID:	5113326

EXTRACTION

Parameter	Data
Flash Point	= 216 - C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	Not Reported; Experimental; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
System	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

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

Overall Quality Determination High

* Related References: Source cited - ATSDR 2012

Study Citation:	U.S. EPA, (2015). Flame retardants used in flexible polyurethane foam: An alternatives assessment update.
OECD Harmonized Template:	Flash Point
HERO ID:	5113326

EXTRACTION

Parameter	Data
Flash Point	= 225 - C
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	Not Reported; Experimental; DIN 51758 method, closed cup
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
System	not reported
Standard Deviation Results	not reported
Results Details	not reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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 Quality Determination High

* Related References: Source cited - EC, 2000

Study Citation:	ECB, (2009). European Union risk assessment report: Tris(2-chloroethyl) phosphate, TCEP. :213.
OECD Harmonized Template:	Autoflammability
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
System	NR
Standard Deviation Results	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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	High	The information or data is from a recognized data collection/repository where data are peer-reviewed by experts in the field, are broadly available to the public for review and use OR includes references to the original sources.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Hoechst AG 1994

Study Citation:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Autoflammability
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not reported
Standard Deviation Results	Not reported
Results Details	Not Reported
Results Value	Not Reported

EVALUATION

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

Overall Quality Determination Medium

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

Study Citation:	NCBI, (2020). PubChem database: Compound summary: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Autoflammability
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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
System	Not reported
Standard Deviation Results	Not reported
Results Details	Not Reported
Results Value	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: 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:	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8..
OECD Harmonized Template:	Viscosity
HERO ID:	5926432

EXTRACTION

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, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20-25°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	2 values were reported: 0.357 P at 25°C and 0.429 P at 20°C.

EVALUATION

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

Overall Quality Determination High

* Related References: 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:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Viscosity
HERO ID:	79051

EXTRACTION

Parameter	**Data**
Viscosity	34
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; NA
Radiolabel, Source, State, and Purity	NA; NA; liquid; NA
Temperature	25°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	N/A	Rating of this factor is not applicable to this kind of information.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	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:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Viscosity
HERO ID:	5926126

EXTRACTION

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, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR
Temperature	20°C
Test Conditions	Not Reported
Standard Deviation Results	Not Reported
Results Details	Not Reported

EVALUATION

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

Overall Quality Determination High

* Related References: 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:	Elsevier, (2019). Reaxys: physical-chemical property data for Tris(2-chloroethyl) phosphate. CAS Registry Number: 115-96-8..
OECD Harmonized Template:	Refractive Index
HERO ID:	5926432

EXTRACTION

Parameter	**Data**
Refractive Index	1.4707 - 1.4786
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	20-25°C
System	Not Reported
Standard Deviation Results	Not Reported
Results Details	20-25°C; 13 values were reported in Reaxys; 12 values were 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

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	Haynes, W. M. (2014). Tris(2-chloroethyl) phosphate. :3-542.
OECD Harmonized Template:	Refractive Index
HERO ID:	5349311

EXTRACTION

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, 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

EVALUATION

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

Overall Quality Determination High

Study Citation:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Refractive Index
HERO ID:	79051

EXTRACTION

Parameter	**Data**
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

EVALUATION

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

Overall Quality Determination Low

Study Citation:	NLM, (2015). PubChem: Hazardous substance data bank: Tris(2-chloroethyl) phosphate, 115-96-8.
OECD Harmonized Template:	Refractive Index
HERO ID:	5926126

EXTRACTION

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, 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

EVALUATION

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

Overall Quality Determination High

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

Study Citation:	RSC, (2019). ChemSpider: Tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Refractive Index
HERO ID:	5926273

EXTRACTION

Parameter	**Data**
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, 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
Results Details Methods	Not Reported
Parameter	Not Reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: Parchem-fine & specialty chemicals

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

EXTRACTION

Parameter	**Data**
Henry's Law	1.67E-7 - atm m^3/mol
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	25 C
pH	NR
System	NR
Standard Deviation Results	Not Reported
Results Details	Not Reported
Results Details Methods	NR

EVALUATION

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

Overall Quality Determination Medium

* Related References: Cites EPI Suite and secondary source 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:	IPCS, (1998). Flame retardants: Tris(chloropropyl) phosphate and tris(2-chloroethyl) phosphate.
OECD Harmonized Template:	Henry's Law
HERO ID:	79051

EXTRACTION

Parameter	**Data**
Henry's Law	3.29 × 10-6
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; NA
Radiolabel, Source, State, 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

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Low	The analytical method is unknown and there is no indication that a reliable method was used.
Domain 3: Other				
	Metric 5:	Databases	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:	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 Template:	Henry's Law
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 Guideline	none; not reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	25ºC
pH	not reported
System	not reported
Standard Deviation Results	not reported
Results Details	not reported
Results Details Methods	not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: IPCS (1998)

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 Template:	Henry's Law
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
Henry's Law	4.16E-05 Pa. m3/mol
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not reported; not reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	not reported
pH	not reported
System	not reported
Standard Deviation Results	not reported
Results Details	not reported
Results Details Methods	not reported

EVALUATION

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

Overall Quality Determination Medium

* Related References: European Commission (2004c)

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 Template:	Henry's Law
HERO ID:	5349334

EXTRACTION

Parameter	**Data**
Henry's Law	1.5E-05 Pa. m3/mol
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	none; not reported; Not Reported
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Temperature	20ºC
pH	not reported
System	not reported
Standard Deviation Results	not reported
Results Details	not reported
Results Details Methods	not reported

EVALUATION

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

Overall Quality Determination Medium

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

EXTRACTION

Parameter	**Data**
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Value	Log Kaw = -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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate OR the analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

* Related References: Cites EPI Suite and secondary source 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:	Ekpe, O. D., Choo, G., Barceló, D., Oh, J. E. (2020). Chapter One - Introduction of emerging halogenated flame retardants in the environment. 88:1-39.
OECD Harmonized Template:	Other Properties
HERO ID:	8775306

EXTRACTION

Parameter	**Data**
CASRN and Test Material	115-96-8; Tris(2-chloroethyl) phosphate
Confidentiality, Type, and Guideline	None; Not specified; NR
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Results Value	Log Koa = 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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	Medium	There is no indication that the methodology for producing the information was biased towards a particular product or outcome.
	Metric 4:	Reliability/Analytical Method	Medium	The analytical method is non-standard but is expected to be appropriate OR the analytical method is unknown but is likely to be appropriate based on the data's inclusion in a peer-reviewed/recognized database or other secondary source.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination Medium

⋆ Related References: Cites EPI Suite and secondary source 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 Science & Technology 52(23):13834-13844.
OECD Harmonized Template:	Miscellaneous
HERO ID:	5165658

EXTRACTION

Parameter	Data
CASRN	115-96-8
Confidentiality, Type, and Guideline	No; calculation; NA
Solvent, Reactivity, Storage, and Stability	NR; NR; NR; NR
Radiolabel, Source, State, and Purity	NR; NR; NR; NR Notes: NR
Value	Not Reported
Temperature	NA
System	evaluation of measured and calculated data
pH	NA
Standard Deviation Results	NA
Results Details	Authors state that 'studies of organic phosphate esters (OPEs) in air have likely mischaracterized the gas-particle partitioning of the more volatile OPEs' and that the results are 'most likely influenced, in part, by equilibrium sampling artifacts such as gas phase sorption to filters'. Measured particle fractions reported in other sources ranged from 15 to >99% (Table S4). Estimated particle distribution were <5% using either Junge-Pankow model or Harner-Bidleman model or by the Arp pp-LFER model (approximate, based on figure S1). Log Koa reported in HERO ID 6967359.

EVALUATION

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

Overall Quality Determination — 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 Template:	Miscellaneous
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, Storage, and Stability	NR; 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 Results	±0.23 (standard prediction uncertainty estimated at K = 298)
Results Details	Log octanol−air partition coefficient (Koa) = 7.85 (calibrated) and 7.93 (uncalibrated)

EVALUATION

Domain		Metric	Rating	Comments
Domain 1: Substance				
	Metric 1:	Representativeness	High	Data are measured or estimated for the subject chemical substance.
	Metric 2:	Appropriateness	High	Measured data are consistent with the subject chemical substance structural features.
Domain 2: Test Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	High	The model had a defined, unambiguous endpoint; r2 = 0.983.

Overall Quality Determination High

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
HERO ID:	10064224

EXTRACTION

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	±0.35
Results Details	surrogate - TCEP-d12 log Koa = 7.86 ± 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 Reliability				
	Metric 3:	Reliability/Unbiased (Method Objectivity)	High	The methodology for producing the information is designed to answer a specific question, and the methodology's objective is clear.
	Metric 4:	Reliability/Analytical Method	High	Data are obtained by accepted standard analytical methods, including, but not limited to OECD guidelines for physical-chemical properties or other developed standard.
Domain 3: Other				
	Metric 5:	Databases	N/A	Rating of this factor is not applicable to this kind of information.
	Metric 6:	Models	N/A	Rating of this factor is not applicable to this kind of information.

Overall Quality Determination High

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

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

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