

according to Regulation (EC) No. 1907/2006

Creation Date 22-Oct-2010 Revision Date 29-Sep-2023 **Revision Number** 8

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE **COMPANY/UNDERTAKING**

1.1. Product identifier

Product Description: Bromoethane

330350000; 330350050; 330351000 Cat No.:

Synonyms Ethyl bromide 602-055-00-1 **Index No** 74-96-4 **CAS No EC No** 200-825-8 C2 H5 Br **Molecular Formula**

REACH registration number 01-2119965776-18

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals. No Information available Uses advised against

1.3. Details of the supplier of the safety data sheet

Company

EU entity/business name Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

UK entity/business name Fisher Scientific UK Bishop Meadow Road,

Loughborough, Leicestershire LE11 5RG, United Kingdom

Swiss distributor - Fisher Scientific AG Neuhofstrasse 11, CH 4153 Reinach

Tel: +41 (0) 56 618 41 11 e-mail - infoch@thermofisher.com

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99 CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

customers in Switzerland:

Tox Info Suisse Emergency Number: 145 (24hr)

Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)

Chemtrec (24h) Toll-Free: 0800 564 402 Chemtrec Local: +41-43 508 20 11 (Zurich)

SECTION 2: HAZARDS IDENTIFICATION

Revision Date 29-Sep-2023

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Flammable liquids Category 2 (H225)

Health hazards

Acute oral toxicity

Acute Inhalation Toxicity - Vapors

Carcinogenicity

Category 4 (H302)

Category 4 (H332)

Category 2 (H351)

Environmental hazards

Hazardous to the ozone layer Category 1 (H420)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

H351 - Suspected of causing cancer

H420 - Harms public health and the environment by destroying ozone in the upper atmosphere

H302 + H332 - Harmful if swallowed or if inhaled

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P312 - Call a POISON CENTER or doctor if you feel unwell

P264 - Wash face, hands and any exposed skin thoroughly after handling

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P502 - Refer to manufacturer or supplier for information on recovery or recycling

2.3. Other hazards

No information available

This product does not contain any known or suspected endocrine disruptors

Toxic to terrestrial vertebrates

Bromoethane Revision Date 29-Sep-2023

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Ethyl bromide	74-96-4	EEC No. 200-825-8	<=100	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Acute Tox. 4 (H332) Carc. 2 (H351) Ozone 1 (H420)

REACH registration number	01-2119965776-18
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Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get

medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

call a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

symptoms occur.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

None reasonably foreseeable. Inhalation of high vapor concentrations may cause

symptoms like headache, dizziness, tiredness, nausea and vomiting

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

No information available.

Bromoethane Revision Date 29-Sep-2023

5.2. Special hazards arising from the substance or mixture

Flammable. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen halides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) (Germany)

Class 3

Switzerland - Storage of hazardous substances

Storage class - SC 3

https://www.kvu.ch/de/themen/stoffe-und-produkte https://www.kvu.ch/fr/themes/substances-et-produits

Revision Date 29-Sep-2023

https://www.kvu.ch/it/temi/sostanze-e-prodotti

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Ethyl bromide			TWA / VME: 200 ppm (8	TWA: 5 ppm 8 uren	TWA / VLA-ED: 5 ppm
			heures).	TWA: 22 mg/m ³ 8 uren	(8 horas)
			TWA / VME: 890 mg/m ³	Huid	TWA / VLA-ED: 23
			(8 heures).		mg/m³ (8 horas)
					Piel
	_				
Component	Italy	Germany	Portugal	The Netherlands	Finland
Ethyl bromide		Haut	TWA: 5 ppm 8 horas		TWA: 5 ppm 8 tunteina
			Pele		TWA: 23 mg/m ³ 8
					tunteina
					l lho
		·			
Component	Austria	Denmark	Switzerland	Poland	Norway
Component Ethyl bromide	Austria	TWA: 5 ppm 8 timer	Haut/Peau	Poland STEL: 100 mg/m³ 15	Norway TWA: 5 ppm 8 timer
	Austria				Norway TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer
	Austria	TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer STEL: 10 ppm 15	Haut/Peau TWA: 5 ppm 8 Stunden TWA: 22 mg/m³ 8	STEL: 100 mg/m ³ 15 minutach TWA: 50 mg/m ³ 8	Norway TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer STEL: 10 ppm 15
	Austria	TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer STEL: 10 ppm 15 minutter	Haut/Peau TWA: 5 ppm 8 Stunden	STEL: 100 mg/m³ 15 minutach	Norway TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer STEL: 10 ppm 15 minutter. value
	Austria	TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer STEL: 10 ppm 15	Haut/Peau TWA: 5 ppm 8 Stunden TWA: 22 mg/m³ 8	STEL: 100 mg/m ³ 15 minutach TWA: 50 mg/m ³ 8	Norway TWA: 5 ppm 8 timer TWA: 22 mg/m³ 8 timer STEL: 10 ppm 15

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Ethyl bromide		TWA-GVI: 5 ppm 8	TWA: 5 ppm 8 hr.		TWA: 20 mg/m ³ 8
·		satima.	TWA: 22 mg/m ³ 8 hr.		hodinách.
		TWA-GVI: 20 mg/m ³ 8	STEL: 15 ppm 15 min		Potential for cutaneous
		satima.	STEL: 66 mg/m ³ 15 min		absorption
			Skin		Ceiling: 40 mg/m ³

Hud

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Ethyl bromide	TWA: 250 ppm 8 tundides. TWA: 890 mg/m³ 8 tundides.		STEL: 250 ppm STEL: 1110 mg/m³ TWA: 200 ppm TWA: 890 mg/m³	TWA: 22 mg/m³ 8 órában. AK	TWA: 5 ppm 8 klukkustundum. TWA: 22 mg/m³ 8 klukkustundum. Skin notation Ceiling: 10 ppm Ceiling: 44 mg/m³

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Ethyl bromide	TWA: 5 mg/m ³	TWA: 5 mg/m ³ IPRD			TWA: 90 ppm 8 ore
	_				TWA: 400 mg/m ³ 8 ore
					STEL: 112 ppm 15
					minute
					STEL: 500 mg/m ³ 15
					minute

ACR33035

minutter. value calculated Hud

Bromoethane Revision Date 29-Sep-2023

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Ethyl bromide	MAC: 5 mg/m ³	TWA: 890 mg/m ³			

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS70 General methods for sampling airborne gases and vapours

MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography

MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

-	Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
-	Viton (R)	See manufacturers	-	EN 374	(minimum requirement)
Į		recommendations			

Skin and body protection Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

Bromoethane Revision Date 29-Sep-2023

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: low boiling organic solvent Type AX Brown conforming to

EN371

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN

141

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance Light yellow

Odor Petroleum distillates
Odor Threshold No data available
Melting Point/Range -119 °C / -182.2 °F
Softening Point No data available

Boiling Point/Range 37 - 40 °C / 98.6 - 104 °F

Flammability (liquid) Highly flammable On basis of test data

Flammability (solid,gas) Not applicable Liquid

Explosion Limits Lower 6.7

Upper 11.3

Flash Point -23 °C / -9.4 °F Method - No information available

Autoignition Temperature

Decomposition Temperature
pH

Viscosity

Viscosity

No data available
Not applicable
0.38 cP at 20 °C
Water Solubility

9 g/L (20°C)

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component log Pow Ethyl bromide 1.7

Vapor Pressure 400 mmHg @ 20 °C

Density / Specific Gravity 1.460

Bulk DensityNot applicableLiquidVapor Density3.76(Air = 1.0)

Particle characteristics Not applicable (liquid)

9.2. Other information

Molecular Formula C2 H5 Br Molecular Weight 108.97

Explosive Properties Vapors may form explosive mixtures with air

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

Bromoethane Revision Date 29-Sep-2023

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization

Hazardous polymerization does not occur.

Hazardous Reactions

None under normal processing.

10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.

10.5. Incompatible materials

Strong oxidizing agents. Strong bases. Metals.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Hydrogen halides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Oral Category 4 **Dermal** No data available Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl bromide	LD50 = 1350 mg/kg (Rat)	-	LC50 = 20.9 mg/L (Rat) 4 h

(b) skin corrosion/irritation; No data available

No data available (c) serious eye damage/irritation;

(d) respiratory or skin sensitization;

No data available Respiratory Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Ethyl bromide			Cat. 2	

No data available (g) reproductive toxicity;

(h) STOT-single exposure; No data available

No data available (i) STOT-repeated exposure;

Bromoethane Revision Date 29-Sep-2023

Target Organs None known.

(j) aspiration hazard; No data available

delayed

Symptoms / effects,both acute and Inhalation of high vapor concentrations may cause symptoms like headache, dizziness,

tiredness, nausea and vomiting.

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any

known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Product is known to contribute to the destruction of the ozone layer. .

12.2. Persistence and degradability Readily biodegradable

Persistence is unlikely, based on information available. **Persistence**

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethyl bromide	1.7	No data available

12.4. Mobility in soil The product contains volatile organic compounds (VOC) which will evaporate easily from all

surfaces Will likely be mobile in the environment due to its volatility. Disperses rapidly in

air

12.5. Results of PBT and vPvB

assessment

No data available for assessment.

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected substance

See table for values

Component	Persistent Organic Pollutant	Ozone Depletion Potential
Ethyl bromide		Annex II Part B substance : ODP = 0.1 - 0.2

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused

Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Bromoethane Revision Date 29-Sep-2023

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers

retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and

empty container away from heat and sources of ignition.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product

was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with

local regulations.

Switzerland - Waste Ordinance Disposal should be in accordance with applicable regional, national and local laws and

regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance,

ADWO) SR 814.600

https://www.fedlex.admin.ch/eli/cc/2015/891/en

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1891

14.2. UN proper shipping name ETHYL BROMIDE

14.3. Transport hazard class(es) 6.1 14.4. Packing group II

<u>ADR</u>

14.1. UN number UN1891

14.2. UN proper shipping name ETHYL BROMIDE

14.3. Transport hazard class(es) 6.1 14.4. Packing group II

<u>IATA</u>

14.1. UN number UN1891

14.2. UN proper shipping name ETHYL BROMIDE

14.3. Transport hazard class(es) 6.1 14.4. Packing group II

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

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Bromoethane

Ethyl bromide	74-96-4	200-825-8	-	-	Х	Х	KE-03666	Х	Х
Component	CAS No	TSCA	TSCA In	wontory	DSL	NDSL	AICS	NZIoC	PICCS
Component	CAS NO	ISCA	notific		DOL	NDSL	AICS	NZIOC	FICCS
			Active-I	nactive					
Ethyl bromide	74-96-4	Х	ACT	IVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Revision Date 29-Sep-2023

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Ethyl bromide	74-96-4	-	Use restricted. See item 75. (see link for restriction details)	- '

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) -	Seveso III Directive (2012/18/EC) -
		Qualifying Quantities for Major Accident	Qualifying Quantities for Safety Report
		Notification	Requirements
Ethyl bromide	74-96-4	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Ethyl bromide	WGK1	Krebserzeugende Stoffe - Class III : 1 mg/m ³
-		(Massenkonzentration)

Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the	Switzerland - Ordinance on	Switzerland - Ordinance of the

Bromoethane Revision Date 29-Sep-2023

	Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Incentive Taxes on Volatile Organic Compounds (OVOC)	Rotterdam Convention on the Prior Informed Consent Procedure
Ethyl bromide 74-96-4 (<=100)	Persistent Organic Pollutants (POPs)		

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H351 - Suspected of causing cancer

H420 - Harms public health and the environment by destroying ozone in the upper atmosphere

H225 - Highly flammable liquid and vapor

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

Substances List **ENCS** - Japanese Existing and New Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances **IECSC** - Chinese Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code **OECD** - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate VOC - (volatile organic compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hvaiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Creation Date 22-Oct-2010 **Revision Date** 29-Sep-2023

Revision Summary SDS sections updated.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Revision Date 29-Sep-2023

COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet