

according to Regulation (EC) No. 1907/2006

Creation Date 07-Sep-2010 Revision Date 28-Aug-2024 Revision Number 1

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

#### 1.1. Product identifier

Product Description: Copper(II) chloride, anhydrous

Cat No. : \$37528

SynonymsCupric chlorideCAS No7447-39-4EC No231-210-2Molecular FormulaCl2 Cu

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

#### 1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH

Erlenbachweg 2, 76870 Kandel, Germany

Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300

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

Tel: +41 (0) 56 618 41 11

https://www.fishersci.ch/ch/en/customer-help-

support/forms/email-us.html

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**

#### 2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

#### Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

#### **Physical hazards**

Based on available data, the classification criteria are not met

#### **Health hazards**

Acute oral toxicityCategory 4 (H302)Acute dermal toxicityCategory 4 (H312)Skin Corrosion/IrritationCategory 2 (H315)Serious Eye Damage/Eye IrritationCategory 1 (H318)

#### **Environmental hazards**

Acute aquatic toxicity
Chronic aquatic toxicity
Category 1 (H400)
Category 2 (H411)

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

**Danger** 

#### **Hazard Statements**

H315 - Causes skin irritation

H318 - Causes serious eye damage

H302 + H312 - Harmful if swallowed or in contact with skin

H400 - Very toxic to aquatic life

H411 - Toxic to aquatic life with long lasting effects

#### **Precautionary Statements**

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

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

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

## 2.3. Other hazards

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment

Toxicity to Soil Dwelling Organisms

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

Revision Date 28-Aug-2024

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Copper chloride (CuCl2)	7447-39-4	EEC No. 231-210-2	>95	Acute Tox. 4 (H302)
				Acute Tox. 4 (H312)
				Skin Irrit. 2 (H315)
				Eye dam. 1 (H318)
				Aquatic Acute 1 (H400)
				Aquatic Chronic 2 (H411)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Copper chloride (CuCl2)	-	Acute = 10 Chronic = 1	-

Full text of Hazard Statements: see section 16

## **SECTION 4: FIRST AID MEASURES**

#### 4.1. Description of first aid measures

**General Advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

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

the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

**Ingestion** Do NOT induce vomiting. Call a physician or poison control center immediately.

**Inhalation** Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth

method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Immediate medical attention is required.

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

Causes severe eye damage.

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

Notes to Physician Treat symptomatically.

## **SECTION 5: FIREFIGHTING MEASURES**

## 5.1. Extinguishing media

#### Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

#### **Suitable Extinguishing Media**

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

## Extinguishing media which must not be used for safety reasons

No information available.

#### 5.2. Special hazards arising from the substance or mixture

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

#### **Hazardous Combustion Products**

Hydrogen chloride gas.

#### 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. Thermal decomposition can lead to release of irritating gases and vapors.

#### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

#### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

#### 6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

#### 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. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

#### **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 containers tightly closed in a dry, cool and well-ventilated place. Store contents under argon. Corrosives area. Store under an inert atmosphere. Protect from moisture.

#### Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

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

Storage Class/LGK 13

Switzerland - Storage of hazardous substances

Storage class - SC 11/13

https://www.kvu.ch/de/themen/stoffe-und-produkte https://www.kvu.ch/fr/themes/substances-et-produits 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): **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
Copper chloride		STEL: 2 mg/m <sup>3</sup> 15 min			TWA / VLA-ED: 0.01
(CuCl2)		TWA: 1 mg/m <sup>3</sup> 8 hr			mg/m³ (8 horas)

	Component	Italy	Germany	Portugal	The Netherlands	Finland
Ī	Copper chloride		TWA: 0.01 mg/m <sup>3</sup> (8			TWA: 0.02 mg/m <sup>3</sup> 8
١	(CuCl2)		Stunden). MAK			tunteina
			Höhepunkt: 0.02 mg/m <sup>3</sup>			

Component	Austria	Denmark	Switzerland	Poland	Norway
Copper chloride	MAK-KZGW: 4 mg/m <sup>3</sup>		STEL: 0.2 mg/m <sup>3</sup> 15		
(CuCl2)	15 Minuten		Minuten		
	MAK-KZGW: 0.4 mg/m <sup>3</sup>		TWA: 0.1 mg/m <sup>3</sup> 8		
	15 Minuten		Stunden		
	MAK-TMW: 1 mg/m <sup>3</sup> 8				
	Stunden				
	MAK-TMW: 0.1 mg/m <sup>3</sup> 8				
	Stunden				

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Copper chloride (CuCl2)	TWA: 0.5 mg/m <sup>3</sup> 1238 MAC: 1.5 mg/m <sup>3</sup>				

#### **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.

MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

#### Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

Page 6/13

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

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Copper chloride (CuCl2) 7447-39-4 ( >95 )				137 mg/kg

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Copper chloride (CuCl2) 7447-39-4 ( >95 )			1 mg/m³	1 mg/m³

#### **Predicted No Effect Concentration (PNEC)**

See values below.

Component	Fresh water		Microorganisms in	` ` ` '
		sediment	sewage treatment	
Copper chloride (CuCl2)	7.8 µg/L	87 mg/kg	230 μg/L	65 mg/kg
7447-39-4 ( >95 )				

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Copper chloride (CuCl2) 7447-39-4 ( >95 )	5.2 μg/L	676 mg/kg			

#### 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.

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
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

**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** No protective equipment is needed under normal use conditions.

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

Copper(II) chloride, anhydrous Revision Date 28-Aug-2024

Small scale/Laboratory use Maintain adequate ventilation

**Environmental exposure controls** Prevent product from entering drains. Do not allow material to contaminate ground water

system. Local authorities should be advised if significant spillages cannot be contained.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

## 9.1. Information on basic physical and chemical properties

Physical State Solid

AppearanceBlue greenOdorOdorless

Odor Threshold
Melting Point/Range
Softening Point
Boiling Point/Range
No data available
No data available
993 °C / 1819.4 °F

Boiling Point/Range 993 °C / 1819.4 °F @ 760 mmHg

Flammability (liquid) Not applicable Solid

Flammability (solid,gas) No information available

**Explosion Limits** No data available

Flash Point No information available Method - No information available

Autoignition Temperature No data available

**Decomposition Temperature** > 300°C

pH 3 50 g/l aq.sol (20°C) Viscosity Not applicable Solid

Viscosity
Not applicable
Water Solubility
Not applicable
620 g/L (20°C)

Solubility in other solvents

No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure No information available

Density / Specific Gravity

Bulk Density

Vapor Density

No data available
No data available
Not applicable

Vapor DensityNot applicableSolidParticle characteristicsNo data available

9.2. Other information

Molecular FormulaCl2 CuMolecular Weight134.45

Evaporation Rate Not applicable - Solid

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

**Hazardous Polymerization** Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.

Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Hydrogen chloride gas.

## **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** Category 4 No data available Inhalation

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Copper chloride (CuCl2)	584 mg/kg (Rat)	1224 mg/kg (Rat)	-

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory No data available No data available Skin

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

No data available (g) reproductive toxicity;

No data available (h) STOT-single exposure;

No data available (i) STOT-repeated exposure;

No information available. **Target Organs** 

Not applicable (j) aspiration hazard;

Solid

Symptoms / effects,both acute and No information available.

delayed

11.2. Information on other hazards

Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

**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**The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms. Toxic to aquatic organisms, may cause long-term adverse

effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Copper chloride (CuCl2)	LC50: 0.120-0.130 mg/L/96h	EC50: 0.04 mg/L/48h	EC50: 0.12 - 0.2 mg/L/96h
	(Carp)	-	_
	LC50: 0.9 mg/L/96h (Bluegill		
	sunfish)		
	LC50: 0.08 mg/L/96h (Rainbow		
	trout)		

Component	Microtox	M-Factor
Copper chloride (CuCl2)		Acute = 10
		Chronic = 1

12.2. Persistence and degradability

**Persistence** Soluble in water, Persistence is unlikely, based on information available.

**Degradability** Not relevant for inorganic substances.

**Degradation in sewage**Contains substances known to be hazardous to the environment or not degradable in waste

treatment plant water treatment plants.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

12.4. Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

In accordance with Annex XIII of the REACH Regulation, inorganic substances do not

require 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
This product does not contain any known or suspected substance

## **SECTION 13: DISPOSAL CONSIDERATIONS**

#### 13.1. Waste treatment methods

Waste from Residues/Unused

**Products** 

Should not be released into the environment. 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.

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

Copper(II) chloride, anhydrous Revision Date 28-Aug-2024

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

application specific.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the

application for which the product was used. Do not empty into drains. Do not let this

chemical enter the environment.

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** UN2802

14.2. UN proper shipping name COPPER CHLORIDE

14.3. Transport hazard class(es) 8 14.4. Packing group 8

**ADR** 

**14.1. UN number** UN2802

14.2. UN proper shipping name COPPER CHLORIDE

14.3. Transport hazard class(es) 8 14.4. Packing group III

<u>IATA</u>

**14.1. UN number** UN2802

14.2. UN proper shipping name COPPER CHLORIDE

14.3. Transport hazard class(es) 8
14.4. Packing group III

**14.5. Environmental hazards** Dangerous for the environment

Product is a marine pollutant according to the criteria set by IMDG/IMO

14.6. Special precautions for user No special precautions required.

**14.7. Maritime transport in bulk** according to IMO instruments

## **SECTION 15: REGULATORY INFORMATION**

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

#### **International Inventories**

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

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Copper chloride (CuCl2)	7447-39-4	231-210-2	ı	-	X	X	KE-08923	Χ	X
Component	CAS No	TSCA	TSCA Ir	ventory	DSL	NDSL	AICS	NZIoC	PICCS
-			notific	ation -					1

#### Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

			Active-Inactive					
Copper chloride (CuCl2)	7447-39-4	X	ACTIVE	X	ı	Х	Х	X

Legend: X - Listed '-' - Not Listed

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

Authorisation/Restrictions according to EU REACH

Not applicable

Componen	t	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)
Copper chloride (	CuCl2)	7447-39-4	-	-	-

#### 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 Repo	
		Notification	Requirements	
Copper chloride (CuCl2)	7447-39-4	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
Ī	Copper chloride (CuCl2)	WGK3	

#### **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.

#### 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

#### Copper(II) chloride, anhydrous

Revision Date 28-Aug-2024

H312 - Harmful in contact with skin

H315 - Causes skin irritation

H318 - Causes serious eye damage

H400 - Very toxic to aquatic life

H411 - Toxic to aquatic life with long lasting effects

#### Legend

**CAS** - Chemical Abstracts Service

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

Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical

Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic

Substances List

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

AICS - Australian Inventory of 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 hygiene.

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.

**Prepared By** Health, Safety and Environmental Department

**Creation Date** 07-Sep-2010 **Revision Date** 28-Aug-2024 **Revision Summary** Initial Release.

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

Revision Date 28-Aug-2024

## **End of Safety Data Sheet**