

according to Regulation (EC) No. 1907/2006

Creation Date 22-Sep-2009 Revision Date 18-Mar-2024 Revision Number 5

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

1.1. Product identifier

Product Description: Cobalt disc, .5" dia. x .010" thick

Cat No. : 98932

 Index No
 027-001-00-9

 CAS No
 7440-48-4

 EC No
 231-158-0

 Molecular Formula
 Co

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

ALFAA98932

Cobalt disc, .5" dia. x .010" thick

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CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Acute oral toxicity Category 4 (H302)

Respiratory Sensitization Category 1 Sub-category 1B (H334)

Skin Sensitization Category 1 (H317)
Germ Cell Mutagenicity Category 2 (H341)
Carcinogenicity Category 1B (H350i)

Reproductive Toxicity Category 1B (H360F)

Environmental hazards

Chronic aquatic toxicity Category 3 (H412)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H302 - Harmful if swallowed

H317 - May cause an allergic skin reaction

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H341 - Suspected of causing genetic defects

H350i - May cause cancer by inhalation

H360F - May damage fertility

H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements

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

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

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

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P284 - Wear respiratory protection

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

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

Additional EU labelling

Restricted to professional users

2.3. Other hazards

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

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This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Cobalt, massive	7440-48-4	EEC No. 231-158-0	<=100	Acute Tox. 4 (H302) Resp. Sens. 1B (H334) Skin Sens. 1 (H317) Muta.2 (H341) Repr. 1B (H360F) Carc. 1B (H350i) Aquatic Chronic 3 (H412)

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. Get medical attention if

symptoms occur.

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. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

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

Suitable Extinguishing Media approved class D extinguishers.

Extinguishing media which must not be used for safety reasons

Cobalt disc, .5" dia. x .010" thick

Water may be ineffective.

5.2. Special hazards arising from the substance or mixture

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

Hazardous Combustion Products

Cobalt oxides.

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. Avoid dust formation. No special precautions required.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Pick up and transfer to properly labelled containers.

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

Ensure adequate ventilation. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

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 in a dry place. Keep away from acids.

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

Storage Class/LGK 6.1D

Switzerland - Storage of hazardous substances

Storage class - SC 6.1

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)

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Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **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 SLIVA (Swiss National Accident Insurance Fund)

Component	European Union	The United Kingdom	France	Belgium	Spain
Cobalt, massive		STEL: 0.3 mg/m3 15 min		TWA: 0.02 mg/m ³ 8	TWA / VLA-ED: 0.02
		TWA: 0.1 mg/m ³ 8 hr		uren	mg/m³ (8 horas)
		Resp. Sens.			
Component	Italy	Germany	Portugal	The Netherlands	Finland
Cobalt, massive		Haut	TWA: 0.02 mg/m ³ 8	TWA: 0.02 mg/m ³ 8	TWA: 0.02 mg/m ³ 8
			horas	uren	tunteina
		,			,
Component	Austria	Denmark	Switzerland	Poland	Norway
Cobalt, massive	TRK-KZGW: 2 mg/m ³	TWA: 0.01 mg/m ³ 8	Haut/Peau	TWA: 0.02 mg/m ³ 8	TWA: 0.02 mg/m ³ 8
	15 Minuten	timer	TWA: 0.05 mg/m ³ 8	godzinach	timer
	TRK-KZGW: 0.4 mg/m ³	STEL: 0.02 mg/m ³ 15	Stunden		STEL: 0.06 mg/m ³ 15
	15 Minuten	minutter			minutter. value
	Haut				calculated fume
	TRK-TMW: 0.5 mg/m ³				
	TRK-TMW: 0.1 mg/m ³				
Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Cobalt, massive	TWA: 0.1 mg/m ³	TWA-GVI: 0.1 mg/m ³ 8	TWA: 0.02 mg/m ³ 8 hr.	Оургио	TWA: 0.05 mg/m ³ 8
Oobait, massive	1 WA. 0.1 mg/m		STEL: 0.3 mg/m ³ 15 min		hodinách, inhalable
		Satiria.	01LL: 0.5 mg/m 15 mm		fraction of aerosol
					Ceiling: 0.1 mg/m ³
					T Ocining. 0.1 mg/m
Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Cobalt, massive	TWA: 0.05 mg/m ³ 8		TWA: 0.1 mg/m ³	TWA: 0.02 mg/m ³ 8	TWA: 0.02 mg/m ³ 8
	tundides.			órában. AK	klukkustundum. dus
					and fume
					Ceiling: 0.04 mg/m ³
					dust and fume

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Cobalt, massive	TWA: 0.5 mg/m ³	TWA: 0.05 mg/m ³ IPRD			TWA: 0.05 mg/m ³ 8 ore
					STEL: 0.1 mg/m ³ 15
					minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Cobalt, massive	TWA: 0.01 mg/m ³ 1108	TWA: 0.05 mg/m ³		TLV: 0.02 mg/m ³ 8	
	Skin notation			timmar. NGV	
	MAC: 0.05 mg/m ³			Hud	

Biological limit values

List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Cobalt, massive			Cobalt: 0.001 mg/L blood end of shift at end	Cobalt: 15 µg/L urine end of workweek	
			of workweek Cobalt: 0.015 mg/L urine end of shift at end of workweek	Cobalt: 1 µg/L blood end of workweek	

Component	Italy	Finland	Denmark	Bulgaria	Romania
Cobalt, massive		Cobalt: 130 nmol/L urine			Cobalt: 15 µg/L urine

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İ	after the work phase or	
	shift after a working	Cobalt: 1 µg/L blood end
	week or exposure	of work week
	period.	

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Cobalt, massive			Cobalt: 30 µg/L urine		
			not critical		

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

MDHS30/2 Cobalt and cobalt compounds in air Laboratory method using flame atomic absorption spectrometry

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

See table for values

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Cobalt, massive 7440-48-4 (<=100)			DNEL = 40µg/m ³	

Predicted No Effect Concentration (PNEC)

See values below.

	Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
			sediment		sewage treatment	
Ī	Cobalt, massive	$PNEC = 0.62 \mu g/L$	PNEC = 53.8 mg/kg		PNEC = 0.37mg/L	PNEC = 10.9mg/kg
	7440-48-4 (<=100)		sediment dw		_	soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Cobalt, massive 7440-48-4 (<=100)	PNEC = 2.36μg/L	PNEC = 69.8mg/kg sediment dw			

8.2. Exposure controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. None under normal use conditions.

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection No special protective equipment required

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Disposable gloves	See manufacturers	-	EN 374	(minimum requirement)
	recommendations			

Skin and body protection Long sleeved clothing.

Respiratory Protection No special protective equipment required.

Large scale/emergency use In case of insufficient ventilation, wear suitable respiratory equipment

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Small scale/Laboratory use No personal respiratory protective equipment normally required

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

Environmental exposure controls Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Solid

AppearanceGreyOdorOdorless

Odor ThresholdNo data availableMelting Point/Range1495 °C / 2723 °FSoftening PointNo data availableBoiling Point/Range2870 °C / 5198 °F

Flammability (liquid) Not applicable Solid

Flammability (solid,gas) No information available

Explosion Limits No data available

Flash Point Not applicable Method - No information available

Autoignition Temperature No data available Decomposition Temperature No data available

pH No information available 4444

Viscosity Not applicable Solid

Water Solubility Insoluble

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Component log Pow

Cobalt, massive 5

Vapor Pressure No information available

Density / Specific Gravity 8.92

Bulk Density

No data available

Vapor Density Not applicable Solid

Particle characteristics No data available

9.2. Other information

Molecular FormulaCoMolecular Weight58.9332

Evaporation Rate Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization
Hazardous Reactions
No information available.
None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

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10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Cobalt oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

Category 4 Oral Dermal No data available Inhalation No data available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cobalt, massive	6171 mg/kg (Rat)	-	LC50 < 0.05 mg/L (Rat) 4 h
	550 mg/kg (Rat)		

(b) skin corrosion/irritation; No data available

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

(d) respiratory or skin sensitization;

Sub Category 1B Respiratory Skin Category 1

No information available

(e) germ cell mutagenicity; Category 2

No data available (f) carcinogenicity;

This product contains one or more substances which are classified by IARC as

carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B) The table below indicates whether each agency has

listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Cobalt, massive	Carc Cat. 1B		Cat. 2	Group 2A

(g) reproductive toxicity; Category 1B

Reproductive Effects Product is or contains a chemical which is a known or suspected reproductive hazard.

(h) STOT-single exposure; No data available

No data available (i) STOT-repeated exposure;

Target Organs None known.

(j) aspiration hazard; Not applicable

Solid

Symptoms / effects, both acute and Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

delayed

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

May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Cobalt, massive	LC50: > 100 mg/L, 96h static (Brachydanio rerio)		

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special

pre-treatment is necessary

Persistence

May persist.

Degradability

Not relevant for inorganic substances.

Degradation in sewage treatment plant

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

water treatment plants.

12.3. Bioaccumulative potential

Product has a high potential to bioconcentrate

Component	log Pow	Bioconcentration factor (BCF)
Cobalt, massive	5	No data available

12.4. Mobility in soil

Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility. Is not likely mobile in the environment due its low water solubility and propensity to bind to soil particles

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

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.

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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 empty into drains. Do not flush to sewer. 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 Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

ADR Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

IATA Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

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

SECTION 15: REGULATORY INFORMATION

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

Not applicable, packaged goods

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)

Cobalt, massive 7440-48-4 231-158-0 - X X KE-06060	ve 7440-48-4 231-158-0 - - X X KE-060	X KE-06	Х	Х	-	-	231-158-0	7440-48-4	Cobalt, massive	

	Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Ī	Cobalt, massive	7440-48-4	Х	ACTIVE	Х	-	Х	Х	X

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

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Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Cobalt, massive	7440-48-4	-	Use restricted. See item 30. (see link for restriction details) Use restricted. See item 28. (see link for restriction details) 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
Cobalt, massive	7440-48-4	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.

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women 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
Cobalt, massive	WGK 3	Class II: 0.5 mg/m³ (Massenkonzentration)
		Krebserzeugende Stoffe - Class I : 0.05 mg/m ³
		(Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Cobalt, massive	Tableaux des maladies professionnelles (TMP) - RG 65,RG 70,RG 70bis,RG 70ter

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.

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

H317 - May cause an allergic skin reaction

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H341 - Suspected of causing genetic defects

H350 - May cause cancer

H350i - May cause cancer by inhalation

H360F - May damage fertility

H412 - Harmful 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 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic 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 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.

Prepared By Health, Safety and Environmental Department

Creation Date 22-Sep-2009 18-Mar-2024 **Revision Date**

Revision Summary New emergency telephone response service provider.

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,

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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