

Creation Date Oct-2013 Revision Date Oct-2018 Revision Number 2

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

1.1. Product identification

Product Description: Propan-2-ol SQ, ER, HPLC

Cat No.: Q13815, Q13827, Q26895, Q26896, Q2689W, Q43566, Q43567, Q1382C

Q1382HSCS, Q26898, Q2689U, Q13818, Q1381C, Q13825, Q26896, Q41807, Q13828,

Q1382CSCS

Synonyms 2-Propanol; IPA; Isopropyl alcohol; Propan-2-ol; Isopropanol

 CAS-No
 67-63-0

 EC-No.
 200-661-7

 Molecular Formula
 C3 H8 O

Reach Registration Number 01-2119457558-25

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

Recommended Use Laboratory chemicals.

Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Product category PC21 - Laboratory chemicals

Process categories PROC15 - Use as a laboratory reagent

Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Thermo Fisher Scientific India Pvt. Ltd

403-404, B-wing, Delphi, Hiranandani Business Park,

Powai, Mumbai 400076, INDIA.

E-mail address <u>laboratorysolutions@thermofisher.com</u>

1.4. Emergency telephone number

India Toll Free: 18 00 22 22 30 Chemtrec US: (800)424-9300 Chemtrec EU: 001(202)483-7616

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Flammable liquids Category 2 (H225)

Health hazards

Serious Eye Damage/Eye Irritation Category 2 (H319)
Specific target organ toxicity - (single exposure) Category 3 (H336)

Environmental hazards

Based on available data, the classification criteria are not met

2.2. Label elements



Signal Word

Danger

Hazard Statements

- H225 Highly flammable liquid and vapor
- H319 Causes serious eye irritation
- H336 May cause drowsiness or dizziness

Precautionary Statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking
- P240 Ground/bond container and receiving equipment
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Isopropyl alcohol	67-63-0	200-661-7	>95	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319)
				STOT SE 3 (H336)

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Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

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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. Get medical attention if

symptoms occur.

Ingestion Do not induce vomiting. Obtain medical attention.

Inhalation Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.

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

Breathing difficulties. May cause central nervous system depression: 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

CO₂, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.

Extinguishing media which must not be used for safety reasons

Do not use water jet. Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

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

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO2), peroxides.

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. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Keep in suitable, closed containers for disposal.

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. Keep away from open flames, hot surfaces and sources of ignition. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

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 before re-use. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Flammables area. Keep container tightly closed in a dry and well-ventilated place.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended). Updated by September 2006 official press release and October 2007 Supplement. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority.

Component	European Union	The United Kingdom	France	Belgium	Spain
Isopropyl alcohol		STEL: 500 ppm 15 min	STEL / VLCT: 400 ppm.	TWA: 200 ppm 8 uren	STEL / VLA-EC: 400
		STEL: 1250 mg/m ³ 15	STEL / VLCT: 980	TWA: 500 mg/m ³ 8 uren	ppm (15 minutos).
		min	mg/m³.	STEL: 400 ppm 15	STEL / VLA-EC: 1000
		TWA: 400 ppm 8 hr		minuten	mg/m³ (15 minutos).
		TWA: 999 mg/m ³ 8 hr		STEL: 1000 mg/m ³ 15	TWA / VLA-ED: 200
				minuten	ppm (8 horas)
					TWA / VLA-ED: 500
					mg/m³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Isopropyl alcohol		TWA: 200 ppm (8	STEL: 400 ppm 15		TWA: 200 ppm 8
		Stunden). AGW -	minutos		tunteina
		exposure factor 2	TWA: 200 ppm 8 horas		TWA: 500 mg/m ³ 8
		TWA: 500 mg/m ³ (8			tunteina
		Stunden). AGW -			STEL: 250 ppm 15
		exposure factor 2			minuutteina

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TWA: 200 ppm (8 Stunden). MAK TWA: 500 mg/m³ (8 Stunden). MAK Höhepunkt: 400 ppm Höhepunkt: 1000 mg/m³	STEL: 620 mg/m³ 15 minuutteina
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Component	Austria	Denmark	Switzerland	Poland	Norway
Isopropyl alcohol	MAK-KZW: 800 ppm 15	TWA: 200 ppm 8 timer	STEL: 400 ppm 15	STEL: 1200 mg/m ³ 15	TWA: 100 ppm 8 timer
	Minuten	TWA: 490 mg/m ³ 8 timer	Minuten	minutach	TWA: 245 mg/m ³ 8 timer
	MAK-KZW: 2000 mg/m ³	-	STEL: 1000 mg/m ³ 15	TWA: 900 mg/m ³ 8	STEL: 125 ppm 15
	15 Minuten		Minuten	godzinach	minutter. value
	MAK-TMW: 200 ppm 8		TWA: 200 ppm 8		calculated
	Stunden		Stunden		STEL: 306.25 mg/m ³ 15
	MAK-TMW: 500 mg/m ³		TWA: 500 mg/m ³ 8		minutter. value
	8 Stunden		Stunden		calculated

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Isopropyl alcohol	TWA: 980.0 mg/m ³ STEL: 1225.0 mg/m ³	TWA-GVI: 400 ppm 8 satima. TWA-GVI: 999 mg/m³ 8 satima. STEL-KGVI: 500 ppm 15 minutama. STEL-KGVI: 1250 mg/m³ 15 minutama.	TWA: 200 ppm 8 hr. STEL: 400 ppm 15 min Skin		TWA: 500 mg/m³ 8 hodinách. Potential for cutaneous absorption Ceiling: 1000 mg/m³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Isopropyl alcohol	TWA: 150 ppm 8 tundides. TWA: 350 mg/m³ 8 tundides. STEL: 250 ppm 15 minutites. STEL: 600 mg/m³ 15 minutites.		STEL: 500 ppm STEL: 1225 mg/m³ TWA: 400 ppm TWA: 980 mg/m³	STEL: 2000 mg/m³ 15 percekben. CK TWA: 500 mg/m³ 8 órában. AK lehetséges borön keresztüli felszívódás	TWA: 200 ppm 8 klukkustundum. TWA: 490 mg/m³ 8 klukkustundum. Skin notation Ceiling: 400 ppm Ceiling: 980 mg/m³

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Isopropyl alcohol	STEL: 600 mg/m ³ TWA: 350 mg/m ³	TWA: 150 ppm IPRD TWA: 350 mg/m³ IPRD STEL: 250 ppm STEL: 600 mg/m³			TWA: 81 ppm 8 ore TWA: 200 mg/m³ 8 ore STEL: 203 ppm 15 minute STEL: 500 mg/m³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Isopropyl alcohol	TWA: 10 mg/m ³ 1721	Ceiling: 1000 mg/m ³	TWA: 200 ppm 8 urah	Indicative STLV: 250	
	STEL: 50 mg/m ³ 1721	TWA: 200 ppm	TWA: 500 mg/m ³ 8 urah	ppm 15 minuter	
	_	TWA: 500 mg/m ³	STEL: 800 ppm 15	Indicative STLV: 600	
		-	minutah	mg/m ³ 15 minuter	
			STEL: 2000 mg/m ³ 15	LLV: 150 ppm 8 timmar.	
			minutah	LLV: 350 mg/m ³ 8	
				timmar.	

Biological limit values List source(s):

Component	European Union	United Kingdom	France	Spain	Germany
Isopropyl alcohol				Acetone: 40 mg/L urine	Acetone: 25 mg/L whole
, .,				end of workweek	blood (end of shift)
					Acetone: 25 mg/L urine
					(end of shift)

Component	Italy	Finland	Denmark	Bulgaria	Romania
Isopropyl alcohol					Acetone: 50 mg/L urine
					end of shift

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) See table for values

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				888 mg/kg
Inhalation				500 mg/m ³

Predicted No Effect Concentration According to our experience and to the information provided to us, the product does not (PNEC) have any harmful effects if it is used and handled as specified. See values below.

Fresh water 140.9 mg/l
Fresh water sediment 552 mg/kg
Marine water 140.9 mg/l
Water Intermittent 140.9 mg/l
Food chain 160 mg/kg
Microorganisms in sewage treatment
Soil (Agriculture) 28 mg/kg

8.2. Exposure controls

Engineering Measures

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

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 Butyl rubber Nitrile rubber	Breakthrough time > 480 minutes > 360 - 480 minutes	Glove thickness 0.5 mm 0.35 - 0.55 mm	EU standard EN 374	Glove comments Permeation rate < 0.9 μg/cm2/min As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Viton (R) Neoprene	> 480 minutes < 40 minutes	0.4 mm 0.7 mm		,

Skin and body protection V

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure 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.

Remove gloves with care avoiding skin contamination.

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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

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits Large scale/emergency use

are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to

EN14387

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

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

Recommended half mask: - Valve filtering: EN405; Half mask: EN140; plus filter, EN 141

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

No information available. **Environmental exposure controls**

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance Colorless **Physical State** Liquid

Odor Alcohol-like **Odor Threshold** No data available

1% ag. sol

Melting Point/Range -89.5 °C / -129.1 °F

No data available **Softening Point**

Boiling Point/Range 81 - 83 °C / 177.8 - 181.4 °F @ 760 mmHg

12 °C / 53.6 °F Flash Point Method - Abel Closed Cup (BS 2000 Part 170, IP

170, AS/NZS 2106)

17 ASTM D 3539 (Butyl acetate = 1.0) **Evaporation Rate**

Not applicable Liquid Flammability (solid,gas)

Explosion Limits Lower 2 Vol% Upper 12 Vol%

43 mmHg @ 20 °C 2.1 @ 20 °C / 68 °F **Vapor Pressure**

Vapor Density (Air = 1.0)ÀSTM D-4052 0.785 Specific Gravity / Density

Bulk Density Not applicable Liquid **Water Solubility** Miscible

No information available

Solubility in other solvents

Partition Coefficient (n-octanol/water)

Component log Pow Isopropyl alcohol 0.05

425 - °C / 797 - °F ASTM E-659 **Autoignition Temperature**

No data available **Decomposition Temperature** 2.27 mPa.s at 20 °C Viscosity

Not explosive explosive air/vapour mixtures possible Vapors may **Explosive Properties**

form explosive mixtures with air

No information available **Oxidizing Properties**

9.2. Other information

Molecular Formula C3 H8 O **Molecular Weight** 60.1

VOC Content(%) 100% (Organic Carbon (by mass) = 59.9 %) (EC/1999/13)

Refractive index 1.377 at 20 °C / 68 °F (ASTM D-1218)

22.7 mN/m at 20 °C / 68 °F Surface tension

Coefficient of expansion 0.0009 / °C

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Dielectric constant 18.6 at 20 °C / 68 °F

Heat of vapourisation 665 J/g

Specific heat capacity

3 kJ/kg °C at 20 °C / 68 °F

Thermal conductivity

3 kJ/kg °C at 20 °C / 68 °F

0.137 W/m °C at 20 °C / 68 °F

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 polymerization does not occur.

Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Heat, flames and sparks. Keep away from open flames, hot surfaces and sources of

gnition.

10.5. Incompatible materials

Strong oxidizing agents. Acids. Halogens. Acid anhydrides.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). peroxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;

OralBased on available data, the classification criteria are not metDermalBased on available data, the classification criteria are not metInhalationBased on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropyl alcohol	5840 mg/kg (Rat)	13900 mg/kg (Rat)	72.6 mg/L (Rat)4 h
		12870 mg/kg (Rabbit)	

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

RespiratorySkin
Based on available data, the classification criteria are not met
Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met

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There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Category 3

Results / Target organs Central nervous system (CNS).

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects, both acute and May cause central nervous system depression: Inhalation of high vapor concentrations may delayed

cause symptoms like headache, dizziness, tiredness, nausea and vomiting

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

. Do not empty into drains. **Ecotoxicity effects**

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Isopropyl alcohol	LC50: > 1400000 µg/L, 96h (Lepomis	13299 mg/L EC50 = 48 h	EC50: > 1000 mg/L, 72h (Desmodesmus	= 35390 mg/L EC50 Photobacterium
	macrochirus)	9714 mg/L EC50 = 24 h	subspicatus)	phosphoreum 5 min
	LC50: = 9640 mg/L, 96h		EC50: > 1000 mg/L, 96h	
	flow-through		(Desmodesmus	
	(Pimephales promelas)		`subspicatus)	
	LC50: = 11130 mg/L,		, ,	
	96h static (Pimephales			
	promelas)			
	, ,			

12.2. Persistence and degradability Expected to be biodegradable

Persistence Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Isopropyl alcohol	0.05	No data available

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

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

Surface tension 22.7 mN/m at 20 °C / 68 °F

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent 12.5. Results of PBT and vPvB

and very bioaccumulative (vPvB). assessment

12.6. Other adverse effects

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

Persistent Organic Pollutant This product does not contain any known or suspected substance **Ozone Depletion Potential** 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. 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 Catalogue, 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 dispose of waste into sewer. Can be incinerated, when in compliance

with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1219

14.2. UN proper shipping name Isopropanol (Isopropyl alcohol)

14.3. Transport hazard class(es) 3 14.4. Packing group II

ADR

14.1. UN number UN1219

14.2. UN proper shipping name Isopropanol (Isopropyl alcohol)

14.3. Transport hazard class(es) 3 14.4. Packing group II

IATA

14.1. UN number UN1219 **14.2. UN proper shipping name** Isopropanol

14.3. Transport hazard class(es) 3 14.4. Packing group II

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Not applicable, packaged goods

Annex II of MARPOL73/78 and the

IBC Code

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Isopropyl alcohol	200-661-7	-		X	X	-	X	X	X	X	X

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Isopropyl alcohol	WGK 1	

Component	France - INRS (Tables of occupational diseases)
Isopropyl alcohol	Tableaux des maladies professionnelles (TMP) - RG 84

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

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

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

H225 - Highly flammable liquid and vapor

H319 - Causes serious eye irritation

H336 - May cause drowsiness or dizziness

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

PICCS - Philippines Inventory of Chemicals and Chemical Substances **ENCS** - Japanese Existing and New 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 TWA - Time Weighted Average

ACGIH - American Conference of Governmental Industrial Hygienists IARC - International Agency for Research on Cancer

DNEL - Derived No Effect Level PNEC - Predicted No Effect Concentration LD50 - Lethal Dose 50% RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% EC50 - Effective Concentration 50% NOEC -

No Observed Effect Concentration POW - Partition coefficient Octanol:Water PBT -Persistent, Bioaccumulative, Toxic vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of ICAO/IATA - International Civil Aviation Organization/International Air Dangerous Goods by Road **Transport Association**

IMO/IMDG - International Maritime Organization/International Maritime MARPOL - International Convention for the Prevention of Pollution from Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development ATE - Acute Toxicity Estimate

BCF - Bioconcentration factor VOC - Volatile Organic Compounds

Key literature references and sources for data

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.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Creation Date Oct-2013 **Next Revision Date** Oct-2023

SDS section 1 updated and update of Format. **Revision Summary**

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

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