

This safety data sheet was created pursuant to the requirements of:  
UK REACH Regulations (SI 2019/758 as amended)

Revision date 09-Oct-2025

Revision Number 3

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

**Product Code(s)** 2643, 2644  
**Safety data sheet number** 62012  
**Product Name** Zerocol SP-Oat Antifreeze  
**UFI:** KH4K-2TR8-WH6U-URVU  
  
**Pure substance/mixture** Mixture

Contains ETHANEDIOL

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

**Recommended use** Heat transfer medium

**1.3. Details of the supplier of the safety data sheet****Supplier**

**Granville Oil & Chemicals Ltd**  
29 Goldthorpe Ind. Est  
Goldthorpe  
Rotherham  
South Yorkshire  
S63 9BL

**Veedol Ireland Ltd**  
77 Camden Street Lower  
Saint Kevin's  
Dublin  
Ireland  
D02 XE80

For further information, please contact

**E-mail address** lab@granvilleoil.com

**Non-Emergency Telephone Number** +44 (0)1709 890099

**1.4. Emergency telephone number**

**Emergency Telephone** 999

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

<b>Acute toxicity - Oral</b>	Category 4*** - (H302)***
<b>Specific target organ toxicity — repeated exposure</b>	Category 2*** - (H373)***

**2.2. Label elements**

Contains ETHANEDIOL


**Signal word**

Warning\*\*\*

**Hazard statements**

H302 - Harmful if swallowed

H373 - May cause damage to organs through prolonged or repeated exposure\*\*\*

**Precautionary statements**

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

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

P270 - Do not eat, drink or smoke when using this product

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P314 - Get medical advice/attention if you feel unwell

P501 - Dispose of contents/ container to an approved waste disposal plant\*\*\*

**UFI:**

KH4K-2TR8-WH6U-URVU

**Unknown aquatic toxicity**

\*\*\*

**2.3. Other hazards**

Causes mild skin irritation.\*\*\*

**SECTION 3: Composition/information on ingredients**
**3.1 Substances**

Not applicable\*\*\*

**3.2 Mixtures\*\*\***

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
ETHANEDIOL*** 107-21-1	90 - 100%	203-473-3 (603-027-00-1)	-	Acute Tox. 4 (H302) STOT RE 2 (H373)	-	-	-
SODIUM METASILICATE PENTAHYDRATE*** 10213-79-3	0 - 10%	229-912-9 (014-010-00-8)	-	Skin Corr. 1B (H314) Met. Corr. 1 (H290) STOT SE 3 (H335) Eye Dam. 1 (H318)	-	-	-

**Full text of H- and EUH-phrases: see section 16**

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (UK REACH Article 59)

**SECTION 4: First aid measures**

#### **4.1. Description of first aid measures**

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.***
<b>Inhalation</b>	Get medical attention if symptoms occur. Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.***

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

<b>Symptoms</b>	Prolonged contact may cause redness and irritation.***
<b>Dermal</b>	Prolonged contact may cause redness and irritation.***
<b>Ingestion</b>	Harmful if swallowed Lethal dose to humans 100ml May cause damage to organs through prolonged or repeated exposure if swallowed Kidneys

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

<b>Note to doctors</b>	If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol: loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
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### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

<b>Suitable Extinguishing Media</b>	Dry chemical, CO2, alcohol-resistant foam or water spray.
<b>Large Fire</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.

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

**Hazardous combustion products** Carbon oxides.

**5.3. Advice for firefighters**

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.\*\*\*

**Other information** Refer to protective measures listed in Sections 7 and 8.\*\*\*

**For emergency responders** Use personal protection recommended in Section 8.

**6.2. Environmental precautions**

**Environmental precautions** See Section 12 for additional Ecological Information.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

**6.4. Reference to other sections**

**Reference to other sections** See section 8 for more information. See section 13 for more information.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation.\*\*\*

**General hygiene considerations** Wash hands before breaks and immediately after handling the product.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.\*\*\*

**7.3. Specific end use(s)**

**Specific use(s)**  
See section 1 for more information.

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

**SECTION 8: Exposure controls/personal protection**
**8.1. Control parameters**
**Exposure Limits**

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Chemical name	United Kingdom
ETHANEDIOL *** 107-21-1	TWA: 10 mg/m <sup>3</sup> (particulate) TWA: 20 ppm TWA: 52 mg/m <sup>3</sup> STEL: 40 ppm STEL: 104 mg/m <sup>3</sup> (vapour) Sk*

**Biological occupational exposure limits**

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

**Derived No Effect Level (DNEL) - Workers \*\*\***

Chemical name	Oral	Dermal	Inhalation
ETHANEDIOL *** 107-21-1		106 mg/kg bw/day [4] [6]	35 mg/m <sup>3</sup> [5] [6]
SODIUM METASILICATE PENTAHYDRATE *** 10213-79-3		1.49 mg/kg/day [4] [6]	6.22 mg/m <sup>3</sup> [4] [6]

[4] Systemic health effects. \*\*\*  
[5] Local health effects. \*\*\*  
[6] Long term. \*\*\*  
[7] Short term. \*\*\*

**Derived No Effect Level (DNEL) - General Public \*\*\***

Chemical name	Oral	Dermal	Inhalation
ETHANEDIOL *** 107-21-1		53 mg/kg bw/day [4] [6]	7 mg/m <sup>3</sup> [5] [6]
SODIUM METASILICATE PENTAHYDRATE *** 10213-79-3	0.74 mg/kg/day [4] [6]	0.74 mg/kg/day [4] [6]	1.55 mg/m <sup>3</sup> [4] [6]

[4] Systemic health effects. \*\*\*  
[5] Local health effects. \*\*\*  
[6] Long term. \*\*\*  
[7] Short term. \*\*\*

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

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
ETHANEDIOL ***	10 mg/L	10 mg/L	1 mg/L	10 mg/L	

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
107-21-1					
SODIUM METASILICATE PENTAHYDRATE*** 10213-79-3	7.5 mg/l	7.5 mg/l	1 mg/l		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
ETHANEDIOL *** 107-21-1	37 mg/kg sediment dw	3.7 mg/kg sediment dw	199.5 mg/L	1.53 mg/kg soil dw	
SODIUM METASILICATE PENTAHYDRATE*** 10213-79-3			1000 mg/l		

## 8.2. Exposure controls

**Engineering controls** No information available.

### Personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.

**Hand protection** Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.

**Skin and body protection** Wear suitable protective clothing.\*\*\*

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear liquid
Colour	Colourless to pale yellow
Odour	No information available.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point		No information available.
Initial boiling point and boiling range		No information available.
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		

Flash point		No information available.
Autoignition temperature		No information available.
Decomposition temperature		No information available.
pH	8.65	
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity		No information available.
Water solubility	Soluble in water	
Solubility(ies)		No information available.
Partition coefficient		No information available.
Vapour pressure		No information available.
Relative density	1.13	
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	
Oxidising properties	No information available	

## 9.2. Other information

## **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

Reactivity Stable under recommended storage conditions.

### 10.2. Chemical stability

Stability Stable under normal conditions.

### Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

### 10.4. Conditions to avoid

Conditions to avoid Excessive heat.

### 10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

### 10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

## **SECTION 11: Toxicological information**

### 11.1. Information on toxicological effects

### Information on likely routes of exposure

**Product Information**

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<b>Inhalation</b>	May cause irritation.
<b>Eye contact</b>	May cause temporary eye irritation.
<b>Skin contact</b>	May cause slight irritation.
<b>Ingestion</b>	Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure if swallowed. Kidneys.

**Symptoms related to the physical, chemical and toxicological characteristics**
**Symptoms** Prolonged contact may cause redness and irritation.\*\*\*

**Acute toxicity**
**Numerical measures of toxicity**

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The following values are calculated based on chapter 3.1 of the GHS document \*\*\*

**ATEmix (oral)** 545.70\*\*\* mg/kg\*\*\*

**Component Information**

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Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
ETHANEDIOL***	7712 mg/kg ( Rat )	> 3500 mg/kg ( Mouse )	> 2.5 mg/L ( Rat ) 6 h
SODIUM METASILICATE PENTAHYDRATE***	1152 - 1349 mg/kg ( Rat )	> 5000 mg/kg ( Rat )	> 2.06 mg/l ( Rat ) 4h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**
**Skin corrosion/irritation** No information available.

**ETHANEDIOL (107-21-1)**

Method	Species	Exposure route	Effective dose	Exposure time	Results
					Brief contact is essentially non-irritating to skin. Prolonged contact may cause slight skin irritation with local redness

**Serious eye damage/eye irritation** No information available.

**ETHANEDIOL (107-21-1)**

Method	Species	Exposure route	Effective dose	Exposure time	Results
					May cause slight eye irritation Corneal injury is unlikely

**Respiratory or skin sensitisation** No information available.

**ETHANEDIOL (107-21-1)**

Method	Species	Exposure route	Results
	Guinea pig	Dermal	Not a skin sensitiser



**Germ cell mutagenicity** No information available.

Component Information  
ETHANEDIOL (107-21-1)

Method	Species	Results
	in vitro	Negative
		Negative Did not show mutagenic effects in animal experiments

SODIUM METASILICATE PENTAHYDRATE (10213-79-3)

Method	Species	Results
	in vitro	Negative
	in vivo	Negative

**Carcinogenicity** No information available.

Component Information  
ETHANEDIOL (107-21-1)

Method	Species	Results
		Did not cause cancer in laboratory animals.

**Reproductive toxicity** No information available.\*\*\*

ETHANEDIOL (107-21-1)

Method	Species	Results
		Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies.

**STOT - single exposure** No information available.

ETHANEDIOL (107-21-1)

Method	Species	Exposure route	Effective dose	Exposure time	Results
					Evaluation of available data suggests that this material is not an STOT-SE toxicant

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

Component Information  
ETHANEDIOL (107-21-1)

Method	Species	Exposure route	Effective dose	Exposure time	Results
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					Observations in humans include: Nystagmus (involuntary eye movement). In animals, effects have been reported on the following organs: Kidney Liver
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**SODIUM METASILICATE PENTAHYDRATE (10213-79-3)**

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 408: Repeated Dose 90-Day Oral Toxicity Study in Rodents	Rat	Oral	227 mg/kg	3 months	NOAEL

**Aspiration hazard** No information available.

**Other adverse effects** No information available.

**SECTION 12: Ecological information**
**12.1. Toxicity**

**Ecotoxicity** Not considered to be harmful to aquatic life.\*\*\*

**Unknown aquatic toxicity** \*\*\*

**ETHANEDIOL (107-21-1)**

Method	Species	Endpoint type	Effective dose	Exposure time	Results
Acute toxicity	Pimephales promelas	LC50	72860 mg/L	96 hours	
OECD Test No. 202: Daphnia sp., Acute Immobilisation Test	Daphnia magna	EC50	> 100 mg/L	48 hours	

**SODIUM METASILICATE PENTAHYDRATE (10213-79-3)**

Method	Species	Endpoint type	Effective dose	Exposure time	Results
	Brachydanio rerio	LC50	210 mg/L	96 hours	
	Daphnia magna	EC50	1700 mg/L	48 hours	

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
ETHANEDIOL ***	EC50: 6500 - 13000mg/L (96h, Pseudokirchneriella subcapitata)	LC50: =41000mg/L (96h, Oncorhynchus mykiss) LC50: 14 - 18mL/L (96h, Oncorhynchus mykiss) LC50: =27540mg/L (96h, Lepomis macrochirus) LC50: =40761mg/L (96h, Oncorhynchus mykiss) LC50: 40000 - 60000mg/L (96h, Pimephales promelas) LC50: =16000mg/L (96h, Poecilia reticulata)	-	EC50: =46300mg/L (48h, Daphnia magna)

## **12.2. Persistence and degradability**

**Persistence and degradability** No information available.

ETHANEDIOL (107-21-1)

Method	Exposure time	Value	Results
OECD Test No. 301A: Ready Biodegradability: DOC Die-Away Test (TG 301 A) or Equivalent.	10 days	Biodegradation 90 - 100 %	Readily biodegradable

## **12.3. Bioaccumulative potential**

**Bioaccumulation** No information available.

**Component Information** \*\*\*

Chemical name	Partition coefficient
ETHANEDIOL ***	-1.36***

## **12.4. Mobility in soil**

**Mobility in soil** Soluble in water.

## **12.5. Results of PBT and vPvB assessment**

**PBT and vPvB assessment** The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
ETHANEDIOL ***	The substance is not PBT / vPvB

## **12.6. Other adverse effects**

No information available.

# **SECTION 13: Disposal considerations**

## **13.1. Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

# **SECTION 14: Transport information**

## **IATA**

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

## **IMDG**

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated

<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	No information available

**RID**

<b>14.1 UN number or ID number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None

**ADR**

<b>14.1 UN number or ID number</b>	Not regulated
<b>14.2 UN proper shipping name</b>	Not regulated
<b>14.3 Transport hazard class(es)</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	
<b>Special Provisions</b>	None

**SECTION 15: Regulatory information**
**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
**National regulations**

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**Authorisations and/or restrictions on use:**

This product contains one or more substances subject to restriction (UK REACH - Annex XVII).  
This product does not contain substances subject to authorisation (UK REACH - Annex XIV).\*\*\*

**Persistent Organic Pollutants**

Not applicable

**Export Notification requirements**

Not applicable

**Named dangerous substances per COMAH Regulations 2015 (as amended)**

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**The Ozone-Depleting Substances Regulations 2015**

Not applicable

**The Biocidal Products Regulations 2001 (as amended)**

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**The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)**

Not applicable

**Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)**

Not applicable

**International Inventories**
**TSCA**

Contact supplier for inventory compliance status

<b>DSL/NDSL</b>	Contact supplier for inventory compliance status
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status
<b>ENCS</b>	Contact supplier for inventory compliance status
<b>IECSC</b>	Contact supplier for inventory compliance status
<b>KECI</b>	Contact supplier for inventory compliance status
<b>PICCS</b>	Contact supplier for inventory compliance status
<b>AIIC</b>	Contact supplier for inventory compliance status
<b>NZIoC</b>	Contact supplier for inventory compliance status

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AIIC** - Australian Inventory of Industrial Chemicals  
**NZIoC** - New Zealand Inventory of Chemicals

**15.2. Chemical safety assessment**

**Chemical Safety Report** No information available

**SECTION 16: Other information**
**Key or legend to abbreviations and acronyms used in the safety data sheet**
**Full text of H-Statements referred to under section 3**

H225 - Highly flammable liquid and vapour  
H301 - Toxic if swallowed  
H302 - Harmful if swallowed  
H311 - Toxic in contact with skin  
H318 - Causes serious eye damage  
H331 - Toxic if inhaled  
H336 - May cause drowsiness or dizziness  
H370 - Causes damage to organs  
H373 - May cause damage to organs through prolonged or repeated exposure\*\*\*

**Legend**

SVHC: Substances of Very High Concern for Authorisation:

**Legend Section 8: Exposure controls/personal protection**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Revision Note \*\*\*Indicates updated data since last publication

**Classification procedure**

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity***	Calculation method***
Acute dermal toxicity***	Calculation method***
Acute inhalation toxicity - gas***	Calculation method***
Acute inhalation toxicity - vapour***	Calculation method***
Acute inhalation toxicity - dust/mist***	Calculation method***
Skin corrosion/irritation***	Calculation method***
Serious eye damage/eye irritation***	Calculation method***
Respiratory sensitisation***	Calculation method***
Skin sensitisation***	Calculation method***

Mutagenicity\*\*\*  
Carcinogenicity\*\*\*  
Reproductive toxicity\*\*\*  
STOT - single exposure\*\*\*  
STOT - repeated exposure\*\*\*  
Acute aquatic toxicity\*\*\*  
Chronic aquatic toxicity\*\*\*  
Aspiration hazard\*\*\*  
Ozone\*\*\*

Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*  
Calculation method\*\*\*

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
European Chemicals Agency (ECHA) (ECHA\_API)  
Environmental Protection Agency  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
National Institute of Technology and Evaluation (NITE)  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
U.S. National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Prepared By** Jitendra Panchal

**Revision date** 09-Oct-2025

**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)  
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**

**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**