

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

Revision date 24-Oct-2023

Revision Number 1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Product Code(s)** 123712  
**Safety data sheet number** 123712  
**Product Name** PARAFLU UP READY  
**Pure substance/mixture** Mixture

Contains ETHANEDIOL

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

**Recommended use** Coolant

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

#### **Supplier**

Univar Solutions UK Ltd  
Aquarius House  
6 Mid Point Business Park  
Bradford  
GBR

For further information, please contact

**E-mail address** SDS.EMEA@univarsolutions.com  
**Non-Emergency Telephone Number** +44 1274 267300 / +44 1274 267306

### 1.4. Emergency telephone number

**Emergency Telephone** SGS - +32 (0)3 575 55 55 (24h)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

|                                                    |                     |
|----------------------------------------------------|---------------------|
| Acute toxicity - Oral                              | Category 4 - (H302) |
| Specific target organ toxicity — repeated exposure | 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

**Unknown aquatic toxicity****Additional information**

This product requires tactile warnings if supplied to the general public.

**2.3. Other hazards**

No information available.

**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<br>107-21-1 | 50 - 60% | 203-473-3<br>(603-027-00-1) | -                            | STOT RE 2 (H373)<br>Acute Tox. 4 (H302)                      | -                                  | -        | -                    |

**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>     | Remove to fresh air. Get medical attention if symptoms occur.                                                     |
| <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>Ingestion</b> | Harmful if swallowed |
|------------------|----------------------|

#### **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. |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### **SECTION 5: Firefighting measures**

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

|                                       |                                                                        |
|---------------------------------------|------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>   | Dry chemical, CO <sub>2</sub> , 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**

|                                      |                                                                                          |
|--------------------------------------|------------------------------------------------------------------------------------------|
| <b>Hazardous combustion products</b> | Carbon oxides. Phosphorus oxides. Oxides of sulphur. Nitrogen oxides (NO <sub>x</sub> ). |
|--------------------------------------|------------------------------------------------------------------------------------------|

**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.

**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**

| Chemical name          | United Kingdom                                                                                                                                            |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| ETHANEDIOL<br>107-21-1 | TWA: 10 mg/m <sup>3</sup><br>TWA: 20 ppm<br>TWA: 52 mg/m <sup>3</sup><br>STEL: 40 ppm<br>STEL: 104 mg/m <sup>3</sup><br>STEL: 30 mg/m <sup>3</sup><br>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<br>107-21-1 |      | 106 mg/kg/day [6] | 35 mg/m <sup>3</sup> [7] |

[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<br>107-21-1 |      | 53 mg/kg/day [6] | 7 mg/m <sup>3</sup> [6] |

[4] Systemic health effects.  
[6] Long term.

**Predicted No Effect Concentration (PNEC)**

| Chemical name          | Freshwater | Freshwater<br>(intermittent release) | Marine water | Marine water<br>(intermittent release) | Air |
|------------------------|------------|--------------------------------------|--------------|----------------------------------------|-----|
| ETHANEDIOL<br>107-21-1 | 10 mg/l    | 10 mg/L                              | 1 mg/l       | 10 mg/L                                |     |

| Chemical name          | Freshwater<br>sediment | Marine sediment | Sewage treatment | Soil       | Food chain |
|------------------------|------------------------|-----------------|------------------|------------|------------|
| ETHANEDIOL<br>107-21-1 | 37 mg/kg               | 3.7 mg/kg       | 199.5 mg/L       | 1.53 mg/kg | 199.5 mg/l |

**8.2. Exposure controls**

**Engineering controls** No information available.

**Personal protective equipment**

|                                 |                                                                                                                                                                                                    |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face protection</b>      | Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.                                                                                                        |
| <b>Hand protection</b>          | 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. |
| <b>Skin and body protection</b> | No special protective equipment required.                                                                                                                                                          |
| <b>Respiratory protection</b>   | 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

|                        |                           |
|------------------------|---------------------------|
| <b>Physical state</b>  | Liquid                    |
| <b>Appearance</b>      | Liquid                    |
| <b>Colour</b>          | red                       |
| <b>Odour</b>           | No information available. |
| <b>Odour threshold</b> | No information available  |

| <u>Property</u>                                | <u>Values</u>            | <u>Remarks • Method</u>  |
|------------------------------------------------|--------------------------|--------------------------|
| <b>Melting point / freezing point</b>          |                          | No information available |
| <b>Initial boiling point and boiling range</b> | 109 °C                   |                          |
| <b>Flammability</b>                            |                          | No information available |
| <b>Flammability Limit in Air</b>               |                          | No information available |
| Upper flammability or explosive limits         |                          |                          |
| Lower flammability or explosive limits         |                          |                          |
| <b>Flash point</b>                             | > 110 °C                 |                          |
| <b>Autoignition temperature</b>                |                          | No information available |
| <b>Decomposition temperature</b>               |                          | No information available |
| <b>pH</b>                                      | 7.90                     |                          |
| pH (as aqueous solution)                       |                          | No information available |
| <b>Kinematic viscosity</b>                     |                          | No information available |
| <b>Dynamic viscosity</b>                       |                          | No information available |
| <b>Water solubility</b>                        | Soluble in water         |                          |
| <b>Solubility(ies)</b>                         |                          | No information available |
| <b>Partition coefficient</b>                   |                          | No information available |
| <b>Vapour pressure</b>                         |                          | No information available |
| <b>Relative density</b>                        | 1.07                     |                          |
| Bulk density                                   |                          |                          |
| Liquid Density                                 |                          |                          |
| <b>Relative vapour density</b>                 |                          | No information available |
| <b>Particle characteristics</b>                |                          | No information available |
| Particle Size                                  |                          |                          |
| Particle Size Distribution                     |                          |                          |
| <b>Explosive properties</b>                    | No information available |                          |
| <b>Oxidising properties</b>                    | 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 Acids.

**10.6. Hazardous decomposition products**

Hazardous decomposition products Carbon oxides. Nitrogen oxides (NOx).

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Information on likely routes of exposure****Product Information**

Inhalation May cause irritation.

Eye contact May cause temporary eye irritation.

Skin contact May cause slight irritation.

Ingestion Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**

Symptoms No information available.

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

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

ATEmix (oral) 980.40 mg/kg

**Component Information**

| Chemical name | Oral LD50            | Dermal LD50           | Inhalation LC50        |
|---------------|----------------------|-----------------------|------------------------|
| ETHANEDIOL    | = 4700 mg/kg ( Rat ) | = 10600 mg/kg ( Rat ) | > 2.5 mg/L ( Rat ) 6 h |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

|                                          |                                                                    |
|------------------------------------------|--------------------------------------------------------------------|
| <b>Skin corrosion/irritation</b>         | No information available.                                          |
| <b>Serious eye damage/eye irritation</b> | No information available.                                          |
| <b>Respiratory or skin sensitisation</b> | No information available.                                          |
| <b>Germ cell mutagenicity</b>            | No information available.                                          |
| <b>Carcinogenicity</b>                   | No information available.                                          |
| <b>Reproductive toxicity</b>             | No information available.                                          |
| <b>STOT - single exposure</b>            | No information available.                                          |
| <b>STOT - repeated exposure</b>          | May cause damage to organs through prolonged or repeated exposure. |
| <b>Aspiration hazard</b>                 | No information available.                                          |
| <b>Other adverse effects</b>             | No information available.                                          |

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

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

**Unknown aquatic toxicity**

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

**12.2. Persistence and degradability**

**Persistence and degradability** No information available.

### 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  
 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  
 14.3 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  
 14.7 Maritime transport in bulk according to IMO instruments No information available

#### RID

|                                   |                |
|-----------------------------------|----------------|
| 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           |

**ADR**

|                                   |                |
|-----------------------------------|----------------|
| 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           |

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

Not applicable

**The Ozone-Depleting Substances Regulations 2015**

Not applicable

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

Not applicable

**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 |
| DSL/NDL       | Contact supplier for inventory compliance status |
| EINECS/ELINCS | Contact supplier for inventory compliance status |
| ENCS          | Contact supplier for inventory compliance status |
| IECSC         | Contact supplier for inventory compliance status |
| KECL          | Contact supplier for inventory compliance status |
| PICCS         | Contact supplier for inventory compliance status |
| AIIC          | Contact supplier for inventory compliance status |
| NZIoC         | 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**

H302 - Harmful if swallowed

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                                                    | Calculation method |
| Carcinogenicity                                                 | Calculation method |
| Reproductive toxicity                                           | Calculation method |
| STOT - single exposure                                          | Calculation method |
| STOT - repeated exposure                                        | Calculation method |
| Acute aquatic toxicity                                          | Calculation method |
| Chronic aquatic toxicity                                        | Calculation method |
| Aspiration hazard                                               | Calculation method |
| Ozone                                                           | 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)

EPA (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)  
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

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**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**