

Creation Date 15-Jun-2010

Revision Date 06-Dec-2024

Revision Number 9

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

### 1.1. Product identifier

Product Description: Cyclopropylzinc bromide, 0.5M solution in THF  
Cat No. : 432820000; 432820500

### 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

**EU entity/business name**  
Thermo Fisher Scientific  
Janssen Pharmaceuticaaan 3a, 2440 Geel, Belgium

**UK entity/business name**  
Fisher Scientific UK  
Bishop Meadow Road,  
Loughborough, Leicestershire LE11 5RG, United Kingdom

**Swiss distributor** - Fisher Scientific AG  
Neuhofstrasse 11, CH 4153 Reinach  
Tel: +41 (0) 56 618 41 11  
e-mail - infoch@thermofisher.com

E-mail address begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

customers in Switzerland:  
Tox Info Suisse Emergency Number: **145 (24hr)**  
Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)  
Chemtrec (24h) Toll-Free: 0800 564 402  
Chemtrec Local: +41-43 508 20 11 (Zurich)

## Section 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

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## Physical hazards

Flammable liquids  
Substances/mixtures which, in contact with water, emit flammable gases

Category 2 (H225)  
Category 2 (H261)

## Health hazards

Acute oral toxicity  
Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation  
Carcinogenicity  
Specific target organ toxicity - (single exposure)

Category 4 (H302)  
Category 1 B (H314)  
Category 1 (H318)  
Category 2 (H351)  
Category 3 (H335) (H336)

## Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

**Danger**

## Hazard Statements

H225 - Highly flammable liquid and vapor  
H261 - In contact with water releases flammable gases  
H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H351 - Suspected of causing cancer  
EUH014 - Reacts violently with water  
EUH019 - May form explosive peroxides

## Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor/physician  
P231 + P232 - Handle and store contents under inert gas. Protect from moisture  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

## 2.3. Other hazards

Reacts violently with water

Toxic to terrestrial vertebrates

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This product does not contain any known or suspected endocrine disruptors

## Section 3: Composition/information on ingredients

### 3.2. Mixtures

| Component               | CAS No      | EC No     | Weight % | CLP Classification - Regulation (EC) No 1272/2008                                                                                       |
|-------------------------|-------------|-----------|----------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Zinc, bromocyclopropyl- | 126403-68-7 |           | 9.6      | Skin Corr. 1B (H314)<br>Eye Dam. 1 (H318)<br>Water React. 2 (H261)                                                                      |
| Tetrahydrofuran         | 109-99-9    | 203-726-8 | 90.4     | Flam. Liq. 2 (H225)<br>Acute Tox. 4 (H302)<br>Eye Irrit. 2 (H319)<br>STOT SE 3 (H335)<br>STOT SE 3 (H336)<br>Carc. 2 (H351)<br>(EUH019) |

| Component       | Specific concentration limits (SCL's)                                    | M-Factor | Component notes |
|-----------------|--------------------------------------------------------------------------|----------|-----------------|
| Tetrahydrofuran | Acute Tox. 4 :: C>82.5%<br>Eye Irrit. 2 :: C>=25%<br>STOT SE 3 :: C>=25% | -        | -               |

Full text of Hazard Statements: see section 16

## 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. Immediate medical attention is required.                                                                                                                                                                                                                              |
| <b>Eye Contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.                                                                                                                                                                                              |
| <b>Skin Contact</b>                       | Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.                                                                                                                                        |
| <b>Ingestion</b>                          | Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.                                                                                                                                                                                           |
| <b>Inhalation</b>                         | If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately. |
| <b>Self-Protection of the First Aider</b> | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.                                                                                                                                                                               |

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

Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting; Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue

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and danger of perforation: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression

## 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

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

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

Water.

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

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

#### Hazardous Combustion Products

Cyclopropane, Zinc, Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen bromide.

### 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## Section 6: ACCIDENTAL RELEASE MEASURES

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

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

### 6.2. Environmental precautions

Should not be released into the environment.

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

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### 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

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Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. If peroxide formation is suspected, do not open or move container. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

## 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

Flammables area. Keep away from heat, sparks and flame. Keep away from water or moist air. Keep refrigerated. Store under an inert atmosphere. Shelf life 12 months. May form explosive peroxides on prolonged storage. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

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

Storage Class/LGK 4.3

## Switzerland - Storage of hazardous substances

Storage class - SC 4.3  
<https://www.kvu.ch/de/themen/stoffe-und-produkte>  
<https://www.kvu.ch/fr/themes/substances-et-produits>  
<https://www.kvu.ch/it/temi/sostanze-e-prodotti>

## 7.3. Specific end use(s)

Use in laboratories

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **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 SUVA (Swiss National Accident Insurance Fund).

| Component       | European Union                                                                                                              | The United Kingdom                                                                                                        | France                                                                                                                                                                                                                         | Belgium                                                                                                                               | Spain                                                                                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | TWA: 50 ppm (8h)<br>TWA: 150 mg/m <sup>3</sup> (8h)<br>STEL: 100 ppm (15min)<br>STEL: 300 mg/m <sup>3</sup> (15min)<br>Skin | STEL: 100 ppm 15 min<br>STEL: 300 mg/m <sup>3</sup> 15 min<br>TWA: 50 ppm 8 hr<br>TWA: 150 mg/m <sup>3</sup> 8 hr<br>Skin | TWA / VME: 50 ppm (8 heures). restrictive limit<br>TWA / VME: 150 mg/m <sup>3</sup> (8 heures). restrictive limit<br>STEL / VLCT: 100 ppm. restrictive limit<br>STEL / VLCT: 300 mg/m <sup>3</sup> . restrictive limit<br>Peau | TWA: 50 ppm 8 uren<br>TWA: 150 mg/m <sup>3</sup> 8 uren<br>STEL: 100 ppm 15 minuten<br>STEL: 300 mg/m <sup>3</sup> 15 minuten<br>Huid | STEL / VLA-EC: 100 ppm (15 minutos).<br>STEL / VLA-EC: 300 mg/m <sup>3</sup> (15 minutos).<br>TWA / VLA-ED: 50 ppm (8 horas)<br>TWA / VLA-ED: 150 mg/m <sup>3</sup> (8 horas)<br>Piel |

| Component       | Italy                                                                                                                         | Germany                                                                                           | Portugal                                                                                  | The Netherlands                                                            | Finland                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | TWA: 50 ppm 8 ore.<br>Time Weighted Average<br>TWA: 150 mg/m <sup>3</sup> 8 ore.<br>Time Weighted Average<br>STEL: 100 ppm 15 | TWA: 50 ppm (8 Stunden). AGW - exposure factor 2<br>TWA: 150 mg/m <sup>3</sup> (8 Stunden). AGW - | STEL: 100 ppm 15 minutos<br>STEL: 300 mg/m <sup>3</sup> 15 minutos<br>TWA: 50 ppm 8 horas | huid<br>STEL: 200 ppm 15 minuten<br>STEL: 600 mg/m <sup>3</sup> 15 minuten | TWA: 50 ppm 8 tunteina<br>TWA: 150 mg/m <sup>3</sup> 8 tunteina<br>STEL: 100 ppm 15 minuutteina |

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|  |                                                                                     |                                                                                                                                                                        |                                               |                                                          |                                                      |
|--|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------|------------------------------------------------------|
|  | minuti. Short-term<br>STEL: 300 mg/m <sup>3</sup> 15<br>minuti. Short-term<br>Pelle | exposure factor 2<br>TWA: 20 ppm (8<br>Stunden). MAK<br>TWA: 60 mg/m <sup>3</sup> (8<br>Stunden). MAK<br>Höhepunkt: 40 ppm<br>Höhepunkt: 120 mg/m <sup>3</sup><br>Haut | TWA: 150 mg/m <sup>3</sup> 8<br>horas<br>Pele | TWA: 100 ppm 8 uren<br>TWA: 300 mg/m <sup>3</sup> 8 uren | STEL: 300 mg/m <sup>3</sup> 15<br>minuutteina<br>Iho |
|--|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------|------------------------------------------------------|

| Component       | Austria                                                                                                                                                                 | Denmark                                                                                                                                        | Switzerland                                                                                                                                                  | Poland                                                                                  | Norway                                                                                                                                                                                    |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | Haut<br>MAK-KZGW: 100 ppm<br>15 Minuten<br>MAK-KZGW: 300 mg/m <sup>3</sup><br>15 Minuten<br>MAK-TMW: 50 ppm 8<br>Stunden<br>MAK-TMW: 150 mg/m <sup>3</sup><br>8 Stunden | TWA: 50 ppm 8 timer<br>TWA: 150 mg/m <sup>3</sup> 8 timer<br>STEL: 300 mg/m <sup>3</sup> 15<br>minutter<br>STEL: 100 ppm 15<br>minutter<br>Hud | Haut/Peau<br>STEL: 100 ppm 15<br>Minuten<br>STEL: 300 mg/m <sup>3</sup> 15<br>Minuten<br>TWA: 50 ppm 8<br>Stunden<br>TWA: 150 mg/m <sup>3</sup> 8<br>Stunden | STEL: 300 mg/m <sup>3</sup> 15<br>minutach<br>TWA: 150 mg/m <sup>3</sup> 8<br>godzinach | TWA: 50 ppm 8 timer<br>TWA: 150 mg/m <sup>3</sup> 8 timer<br>STEL: 75 ppm 15<br>minutter. value<br>calculated<br>STEL: 187.5 mg/m <sup>3</sup> 15<br>minutter. value<br>calculated<br>Hud |

| Component       | Bulgaria                                                                                                           | Croatia                                                                                                                                                                       | Ireland                                                                                                                        | Cyprus                                                                                                                                  | Czech Republic                                                                                                       |
|-----------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | TWA: 50.0 ppm<br>TWA: 150.0 mg/m <sup>3</sup><br>STEL : 100 ppm<br>STEL : 300.0 mg/m <sup>3</sup><br>Skin notation | kože<br>TWA-GVI: 50 ppm 8<br>satima.<br>TWA-GVI: 150 mg/m <sup>3</sup> 8<br>satima.<br>STEL-KGVI: 100 ppm<br>15 minutama.<br>STEL-KGVI: 300 mg/m <sup>3</sup><br>15 minutama. | TWA: 50 ppm 8 hr.<br>TWA: 150 mg/m <sup>3</sup> 8 hr.<br>STEL: 100 ppm 15 min<br>STEL: 300 mg/m <sup>3</sup> 15<br>min<br>Skin | Skin-potential for<br>cutaneous absorption<br>STEL: 100 ppm<br>STEL: 300 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup> | TWA: 150 mg/m <sup>3</sup> 8<br>hodinách.<br>Potential for cutaneous<br>absorption<br>Ceiling: 300 mg/m <sup>3</sup> |

| Component       | Estonia                                                                                                                                                           | Gibraltar                                                                                                                             | Greece                                                                                     | Hungary                                                                                                                                                                                                         | Iceland                                                                                                                                            |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | Nahk<br>TWA: 50 ppm 8<br>tundides.<br>TWA: 150 mg/m <sup>3</sup> 8<br>tundides.<br>STEL: 100 ppm 15<br>minutites.<br>STEL: 300 mg/m <sup>3</sup> 15<br>minutites. | Skin notation<br>TWA: 50 ppm 8 hr<br>TWA: 150 mg/m <sup>3</sup> 8 hr<br>STEL: 100 ppm 15 min<br>STEL: 300 mg/m <sup>3</sup> 15<br>min | STEL: 250 ppm<br>STEL: 735 mg/m <sup>3</sup><br>TWA: 200 ppm<br>TWA: 590 mg/m <sup>3</sup> | STEL: 300 mg/m <sup>3</sup> 15<br>percekben. CK<br>STEL: 100 ppm 15<br>percekben. CK<br>TWA: 150 mg/m <sup>3</sup> 8<br>óraban. AK<br>TWA: 50 ppm 8 óraban.<br>AK<br>lehetséges borón<br>keresztüli felszívódás | STEL: 100 ppm<br>STEL: 300 mg/m <sup>3</sup><br>TWA: 50 ppm 8<br>klukkustundum.<br>TWA: 150 mg/m <sup>3</sup> 8<br>klukkustundum.<br>Skin notation |

| Component       | Latvia                                                                                                                                  | Lithuania                                                                                                  | Luxembourg                                                                                                                                                                                               | Malta                                                                                                                                                                        | Romania                                                                                                                                          |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | skin - potential for<br>cutaneous exposure<br>STEL: 100 ppm<br>STEL: 300 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup> | TWA: 50 ppm IPRD<br>TWA: 150 mg/m <sup>3</sup> IPRD<br>Oda<br>STEL: 100 ppm<br>STEL: 300 mg/m <sup>3</sup> | Possibility of significant<br>uptake through the skin<br>TWA: 50 ppm 8<br>Stunden<br>TWA: 150 mg/m <sup>3</sup> 8<br>Stunden<br>STEL: 100 ppm 15<br>Minuten<br>STEL: 300 mg/m <sup>3</sup> 15<br>Minuten | possibility of significant<br>uptake through the skin<br>TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup><br>STEL: 100 ppm 15<br>minuti<br>STEL: 300 mg/m <sup>3</sup> 15<br>minuti | Skin notation<br>TWA: 50 ppm 8 ore<br>TWA: 150 mg/m <sup>3</sup> 8 ore<br>STEL: 100 ppm 15<br>minute<br>STEL: 300 mg/m <sup>3</sup> 15<br>minute |

| Component       | Russia                     | Slovak Republic                                                                                                      | Slovenia                                                                                                                                    | Sweden                                                                                                                                                                  | Turkey                                                                                                                                    |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Tetrahydrofuran | MAC: 100 mg/m <sup>3</sup> | Ceiling: 300 mg/m <sup>3</sup><br>Potential for cutaneous<br>absorption<br>TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup> | TWA: 50 ppm 8 urah<br>TWA: 150 mg/m <sup>3</sup> 8 urah<br>Koža<br>STEL: 100 ppm 15<br>minutah<br>STEL: 300 mg/m <sup>3</sup> 15<br>minutah | Binding STEL: 100 ppm<br>15 minuter<br>Binding STEL: 300<br>mg/m <sup>3</sup> 15 minuter<br>TLV: 50 ppm 8 timmar.<br>NGV<br>TLV: 150 mg/m <sup>3</sup> 8<br>timmar. NGV | Deri<br>TWA: 50 ppm 8 saat<br>TWA: 150 mg/m <sup>3</sup> 8 saat<br>STEL: 100 ppm 15<br>dakika<br>STEL: 300 mg/m <sup>3</sup> 15<br>dakika |

## Biological limit values

List source(s):

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| Component       | European Union | United Kingdom | France | Spain                                         | Germany                                          |
|-----------------|----------------|----------------|--------|-----------------------------------------------|--------------------------------------------------|
| Tetrahydrofuran |                |                |        | Tetrahydrofuran: 2 mg/L<br>urine end of shift | Tetrahydrofuran: 2 mg/L<br>urine (end of shift ) |

| Component       | Gibraltar | Latvia | Slovak Republic                                                   | Luxembourg | Turkey |
|-----------------|-----------|--------|-------------------------------------------------------------------|------------|--------|
| Tetrahydrofuran |           |        | Tetrahydrofuran: 2 mg/L<br>urine end of exposure or<br>work 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) / Derived Minimum Effect Level (DMEL)

See table for values

| Component                            | Acute effects local<br>(Dermal) | Acute effects<br>systemic (Dermal) | Chronic effects local<br>(Dermal) | Chronic effects<br>systemic (Dermal) |
|--------------------------------------|---------------------------------|------------------------------------|-----------------------------------|--------------------------------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) |                                 |                                    |                                   | DNEL = 12.6mg/kg<br>bw/day           |

| Component                            | Acute effects local<br>(Inhalation) | Acute effects<br>systemic (Inhalation) | Chronic effects local<br>(Inhalation) | Chronic effects<br>systemic (Inhalation) |
|--------------------------------------|-------------------------------------|----------------------------------------|---------------------------------------|------------------------------------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) | DNEL = 300mg/m <sup>3</sup>         | DNEL = 96mg/m <sup>3</sup>             | DNEL = 150mg/m <sup>3</sup>           | DNEL = 72.4mg/m <sup>3</sup>             |

## Predicted No Effect Concentration (PNEC)

See values below.

| Component                            | Fresh water     | Fresh water<br>sediment         | Water Intermittent | Microorganisms in<br>sewage treatment | Soil (Agriculture)          |
|--------------------------------------|-----------------|---------------------------------|--------------------|---------------------------------------|-----------------------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) | PNEC = 4.32mg/L | PNEC = 23.3mg/kg<br>sediment dw | PNEC = 21.6mg/L    | PNEC = 4.6mg/L                        | PNEC = 2.13mg/kg<br>soil dw |

| Component                            | Marine water     | Marine water<br>sediment        | Marine water<br>Intermittent | Food chain             | Air |
|--------------------------------------|------------------|---------------------------------|------------------------------|------------------------|-----|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) | PNEC = 0.432mg/L | PNEC = 2.33mg/kg<br>sediment dw |                              | PNEC = 67mg/kg<br>food |     |

## 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. Use explosion-proof electrical/ventilating/lighting/equipment.

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)

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## Hand Protection

Protective gloves

| Glove material  | Breakthrough time                 | Glove thickness | EU standard | Glove comments        |
|-----------------|-----------------------------------|-----------------|-------------|-----------------------|
| Butyl rubber    | See manufacturers recommendations | -               | EN 374      | (minimum requirement) |
| Neoprene gloves |                                   |                 |             |                       |

## Skin and body protection

Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

## Respiratory Protection

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

## Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced  
**Recommended Filter type:** low boiling organic solvent Type AX Brown conforming to EN371 or Organic gases and vapours filter Type A Brown conforming to EN14387

## Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.  
**Recommended half mask:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141  
When RPE is used a face piece Fit Test should be conducted

## Environmental exposure controls

No information available.

## Section 9: Physical and chemical properties

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

#### Physical State

Liquid

#### Appearance

#### Odor

No information available

#### Odor Threshold

No data available

#### Melting Point/Range

No data available

#### Softening Point

No data available

#### Boiling Point/Range

No information available

#### Flammability (liquid)

Highly flammable

On basis of test data

#### Flammability (solid,gas)

Not applicable

Liquid

#### Explosion Limits

No data available

#### Flash Point

-17 °C / 1.4 °F

**Method -** No information available

#### Autoignition Temperature

No data available

#### Decomposition Temperature

No data available

#### pH

No information available

#### Viscosity

No data available

#### Water Solubility

Reacts violently with water

#### Solubility in other solvents

No information available

#### Partition Coefficient (n-octanol/water)

#### Component

**log Pow**

#### Tetrahydrofuran

0.45

#### Vapor Pressure

No data available

#### Density / Specific Gravity

0.969



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|                          |                         |             |
|--------------------------|-------------------------|-------------|
| Bulk Density             | Not applicable          | Liquid      |
| Vapor Density            | No data available       | (Air = 1.0) |
| Particle characteristics | Not applicable (liquid) |             |

## 9.2. Other information

|                                                                        |                                                          |
|------------------------------------------------------------------------|----------------------------------------------------------|
| Explosive Properties                                                   | Vapors may form explosive mixtures with air              |
| Substances/mixtures which, in contact with water, emit flammable gases | Emitted gas ignites spontaneously Gas(es) = Cyclopropane |

## Section 10: Stability and reactivity

### 10.1. Reactivity

Reactive Hazard; Yes

### 10.2. Chemical stability

Water reactive. Reacts violently with water, liberating extremely flammable gases. May form explosive peroxides.

### 10.3. Possibility of hazardous reactions

|                          |                                          |
|--------------------------|------------------------------------------|
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions      | None under normal processing.            |

### 10.4. Conditions to avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moist air or water.

### 10.5. Incompatible materials

Acids. Acid chlorides. Chloroformates. Alcohols. Peroxides. Strong bases. Oxidizing agent.

### 10.6. Hazardous decomposition products

Cyclopropane. Zinc. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen bromide.

## Section 11: Toxicological information

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

#### Product Information

#### (a) acute toxicity;

|            |                                                                  |
|------------|------------------------------------------------------------------|
| Oral       | Category 4                                                       |
| Dermal     | Based on available data, the classification criteria are not met |
| Inhalation | Based on available data, the classification criteria are not met |

#### Toxicology data for the components

| Component       | LD50 Oral          | LD50 Dermal           | LC50 Inhalation                               |
|-----------------|--------------------|-----------------------|-----------------------------------------------|
| Tetrahydrofuran | 1650 mg/kg ( Rat ) | > 2000 mg/kg (Rabbit) | 180 mg/L ( Rat ) 1 h<br>53.9 mg/L ( Rat ) 4 h |

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

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**(d) respiratory or skin sensitization;**

**Respiratory** No data available  
**Skin** No data available

| Component                            | Test method                                       | Test species | Study result    |
|--------------------------------------|---------------------------------------------------|--------------|-----------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) | Local Lymph Node Assay<br>OECD Test Guideline 429 | mouse        | non-sensitising |

**(e) germ cell mutagenicity;**

No data available

| Component                            | Test method                                             | Test species          | Study result |
|--------------------------------------|---------------------------------------------------------|-----------------------|--------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) | OECD Test Guideline 476<br>Gene cell mutation           | in vivo<br>Mammalian  | negative     |
|                                      | OECD Test Guideline 473<br>Chromosomal aberration assay | in vitro<br>Mammalian | negative     |

**(f) carcinogenicity;**

Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen  
Limited evidence of a carcinogenic effect

| Component       | EU | UK | Germany | IARC     |
|-----------------|----|----|---------|----------|
| Tetrahydrofuran |    |    |         | Group 2B |

**(g) reproductive toxicity;**

No data available

| Component                            | Test method             | Test species / Duration | Study result      |
|--------------------------------------|-------------------------|-------------------------|-------------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) | OECD Test Guideline 416 | Rat<br>2 Generation     | NOAEL = 3,000 ppm |

**(h) STOT-single exposure;**

Category 3

**Results / Target organs** Respiratory system, Central nervous system (CNS).

**(i) STOT-repeated exposure;**

No data available

**Target Organs** No information available.

**(j) aspiration hazard;**

No data available

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed**

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Causes central nervous system depression.

**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

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## 12.1. Toxicity

### Ecotoxicity effects

Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

| Component       | Freshwater Fish                                                                     | Water Flea                                   | Freshwater Algae |
|-----------------|-------------------------------------------------------------------------------------|----------------------------------------------|------------------|
| Tetrahydrofuran | 2160 mg/l LC50 = 96 h<br>Pimephales promelas<br>Leuciscus idus: LC50: 2820 mg/L/48h | EC50 48 h 3485 mg/l<br>EC50: >10000 mg/L/24h |                  |

## 12.2. Persistence and degradability

No information available

### Persistence

Persistence is unlikely, based on information available.

### Degradability

Reacts with water.

### Degradation in sewage treatment plant

Reacts violently with water.

## 12.3. Bioaccumulative potential

Bioaccumulation is unlikely; Product does not bioaccumulate due to reaction with water

| Component       | log Pow | Bioconcentration factor (BCF) |
|-----------------|---------|-------------------------------|
| Tetrahydrofuran | 0.45    | No data available             |

## 12.4. Mobility in soil

Reacts violently with water . Is not likely mobile in the environment.

## 12.5. Results of PBT and vPvB assessment

Reacts violently with water.

## 12.6. Endocrine disrupting properties

### Endocrine Disruptor Information

| Component       | EU - Endocrine Disruptors Candidate List | EU - Endocrine Disruptors - Evaluated Substances |
|-----------------|------------------------------------------|--------------------------------------------------|
| Tetrahydrofuran | Group III Chemical                       |                                                  |

## 12.7. Other adverse effects

### 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 Catalog, Waste Codes are not product specific, but application specific.

#### Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in

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compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

## 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

|                                         |                                                             |
|-----------------------------------------|-------------------------------------------------------------|
| <b>14.1. UN number</b>                  | UN3399                                                      |
| <b>14.2. UN proper shipping name</b>    | ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE |
| <b>Technical Shipping Name</b>          | Tetrahydrofuran, Cyclopropylzinc bromide                    |
| <b>14.3. Transport hazard class(es)</b> | 4.3                                                         |
| <b>Subsidiary Hazard Class</b>          | 3                                                           |
| <b>14.4. Packing group</b>              | II                                                          |

### ADR

|                                         |                                                             |
|-----------------------------------------|-------------------------------------------------------------|
| <b>14.1. UN number</b>                  | UN3399                                                      |
| <b>14.2. UN proper shipping name</b>    | ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE |
| <b>Technical Shipping Name</b>          | Tetrahydrofuran, Cyclopropylzinc bromide                    |
| <b>14.3. Transport hazard class(es)</b> | 4.3                                                         |
| <b>Subsidiary Hazard Class</b>          | 3                                                           |
| <b>14.4. Packing group</b>              | II                                                          |

### IATA

|                                         |                                                             |
|-----------------------------------------|-------------------------------------------------------------|
| <b>14.1. UN number</b>                  | UN3399                                                      |
| <b>14.2. UN proper shipping name</b>    | Organometallic substance, liquid, water-reactive, flammable |
| <b>Technical Shipping Name</b>          | Tetrahydrofuran, Cyclopropylzinc bromide                    |
| <b>14.3. Transport hazard class(es)</b> | 4.3                                                         |
| <b>Subsidiary Hazard Class</b>          | 3                                                           |
| <b>14.4. Packing group</b>              | II                                                          |

**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** Not applicable, packaged goods

## Section 15: Regulatory information

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

#### International Inventories

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

| Component               | CAS No      | EINECS    | ELINCS | NLP | IECSC | TCSI | KECL     | ENCS | ISHL |
|-------------------------|-------------|-----------|--------|-----|-------|------|----------|------|------|
| Zinc, bromocyclopropyl- | 126403-68-7 | -         | -      | -   | -     | -    | -        | -    | -    |
| Tetrahydrofuran         | 109-99-9    | 203-726-8 | -      | -   | X     | X    | KE-33454 | X    | X    |

| Component | CAS No | TSCA | TSCA Inventory | DSL | NDSL | AICS | NZIoC | PICCS |
|-----------|--------|------|----------------|-----|------|------|-------|-------|
|-----------|--------|------|----------------|-----|------|------|-------|-------|

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|                         |             |   | notification -<br>Active-Inactive |   |   |   |   |   |
|-------------------------|-------------|---|-----------------------------------|---|---|---|---|---|
| Zinc, bromocyclopropyl- | 126403-68-7 | - | -                                 | - | - | - | - | - |
| Tetrahydrofuran         | 109-99-9    | X | ACTIVE                            | X | - | X | X | X |

**Legend:** X - Listed '-' - Not Listed

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

## Authorisation/Restrictions according to EU REACH

| Component               | CAS No      | REACH (1907/2006) -<br>Annex XIV - Substances<br>Subject to Authorization | REACH (1907/2006) -<br>Annex XVII - Restrictions<br>on Certain Dangerous<br>Substances | REACH Regulation (EC<br>1907/2006) article 59 -<br>Candidate List of<br>Substances of Very High<br>Concern (SVHC) |
|-------------------------|-------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Zinc, bromocyclopropyl- | 126403-68-7 | -                                                                         | -                                                                                      | -                                                                                                                 |
| Tetrahydrofuran         | 109-99-9    | -                                                                         | Use restricted. See entry<br>75.<br>(see link for restriction<br>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) -<br>Qualifying Quantities for Major Accident<br>Notification | Seveso III Directive (2012/18/EC) -<br>Qualifying Quantities for Safety Report<br>Requirements |
|-------------------------|-------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Zinc, bromocyclopropyl- | 126403-68-7 | Not applicable                                                                                  | Not applicable                                                                                 |
| Tetrahydrofuran         | 109-99-9    | 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 2000/39/EC establishing a first list of indicative occupational exposure limit values

## National Regulations

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

## WGK Classification

Water endangering class = 1 (self classification)

| Component       | Germany - Water Classification (AwSV) | Germany - TA-Luft Class |
|-----------------|---------------------------------------|-------------------------|
| Tetrahydrofuran | WGK1                                  |                         |

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

## 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.

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| Component                            | Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81) | Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC) | Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Tetrahydrofuran<br>109-99-9 ( 90.4 ) |                                                                                                                | Group I                                                                         |                                                                                             |

## 15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

## Section 16: Other information

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

H261 - In contact with water releases flammable gases  
H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H318 - Causes serious eye damage  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H351 - Suspected of causing cancer  
EUH019 - May form explosive peroxides  
H225 - Highly flammable liquid and vapor  
H319 - Causes serious eye irritation

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

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

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

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

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

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer  
Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

### Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

**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)

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

**Physical hazards** On basis of test data

**Health Hazards** Calculation method

**Environmental hazards** Calculation method

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and

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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.

Chemical incident response training.

|                  |                 |
|------------------|-----------------|
| Creation Date    | 15-Jun-2010     |
| Revision Date    | 06-Dec-2024     |
| Revision Summary | Not applicable. |

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.  
COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No  
1907/2006 .**

**For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2,  
Number 3, Chemo (SR 813.11 - Ordinance on Protection against Dangerous Substances and  
Preparations).**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**