# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

Version 9.0
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Dichloromethane EMPROVE® ESSENTIAL Ph Eur,BP,NF

Product Number : 1.06049
Catalogue No. : 106049
Brand : Millipore
Index-No. : 602-004-00-3
REACH No. : 01-2119480404-41-XXXX
CAS-No. : 75-09-2

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

Identified uses : Pharmaceutical production and analysis

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

Company : Sigma-Aldrich Ireland Limited
Vale Road
Arklow
CO WICKLOW
CO WICKLOW
IRELAND

Telephone : +353 402-20300
E-mail address : TechnicalService@merckgroup.com

### 1.4 Emergency telephone number

Emergency Phone # : +(353)-19014670 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

| | |
|---|---|
| Skin irritation, Category 2 | H315: Causes skin irritation. |
| Eye irritation, Category 2 | H319: Causes serious eye irritation. |
| Carcinogenicity, Category 2 | H351: Suspected of causing cancer. |
| Specific target organ toxicity - | H336: May cause drowsiness or dizziness. |



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single exposure, Category 3, Central nervous system

## 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :

Signal word : Warning

Hazard statements :

| | |
|---|---|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |
| H351 | Suspected of causing cancer. |

Precautionary statements :

**Prevention:**

| | |
|---|---|
| P202 | Do not handle until all safety precautions have been read and understood. |
| P261 | Avoid breathing mist or vapours. |
| P264 | Wash skin thoroughly after handling. |

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Reduced Labelling (<= 125 ml)**

Hazard pictograms :

| | |
|---|---|
| Signal word | Warning |
| Hazard Statements<br>H351 | Suspected of causing cancer. |
| Precautionary Statements<br>P202 | Do not handle until all safety precautions have been read and understood. |
| P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |
| Supplemental Hazard Statements | none |



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### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Index-No. : 602-004-00-3

EC-No. : 200-838-9

**Components**

| Chemical name | CAS-No.<br>EC-No. | Concentration (% w/w) | M-Factor, SCL, ATE |
|---|---|---|---|
| Dichloromethane | 75-09-2<br>200-838-9 | >= 90 - <= 100 | specific concentration limit STOT SE 3; H336 20 % |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice : Show this safety data sheet to the doctor in attendance.

If inhaled : After inhalation: fresh air. Call in physician.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed : After swallowing: immediately make victim drink water (two glasses at most).



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Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2 GHS label elements) and/or in section 11

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

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : | For this substance/mixture no limitations of extinguishing agents are given. |

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

| | | |
|---|---|---|
| Specific hazards during fire fighting | : | Not combustible.<br><br>Fire may cause evolution of:<br>Hydrogen chloride gas<br>Phosgene<br>Ambient fire may liberate hazardous vapours. |
| Hazardous combustion products | : | Carbon oxides<br><br>Hydrogen chloride gas |

### 5.3 Advice for firefighters

| | | |
|---|---|---|
| Special protective equipment for fire-fighters | : | Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. |
| Further information | : | Suppress (knock down) gases/vapours/mists with a water spray jet.<br>Prevent fire extinguishing water from contaminating surface water or the ground water system. |

## SECTION 6: Accidental release measures

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

| | | |
|---|---|---|
| Personal precautions | : | Advice for non-emergency personnel:<br>Do not breathe vapours, aerosols.<br>Avoid substance contact.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert. |

Wear appropriate personal protective equipment, as indicated in Section 8.

### 6.2 Environmental precautions



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| | | |
|---|---|---|
| Environmental precautions | : | Do not let product enter drains. |

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

| | | |
|---|---|---|
| Methods for cleaning up | : | Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10).<br>Take up with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area. |

### 6.4 Reference to other sections

For disposal considerations see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

| | | |
|---|---|---|
| Advice on safe handling | : | Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. |
| Hygiene measures | : | Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. |
| Temperature class | : | T1 |

For precautions see section 2 GHS label elements

### 7.2 Conditions for safe storage, including any incompatibilities

| | | |
|---|---|---|
| Further information on storage conditions | : | Protected from light.<br><br>Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons. |
| Storage class (TRGS 510) | : | 6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects |
| Further information on storage stability | : | Recommended storage temperature if relevant, see product label. |
| Recommended storage temperature | : | Recommended storage temperature if relevant, see product label. |

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated



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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---|---|---|---|---|
| Dichloromethane | 75-09-2 | OELV - 8 hrs (TWA) | 100 ppm<br>353 mg/m3 | IE OEL |
| | Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body | | | |
| | | TWA | 100 ppm<br>353 mg/m3 | 2017/164/EU |
| | Further information: Identifies the possibility of significant uptake through the skin, Indicative | | | |
| | | STEL | 200 ppm<br>706 mg/m3 | 2017/164/EU |
| | Further information: Identifies the possibility of significant uptake through the skin, Indicative | | | |

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006**

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|---|---|---|---|---|
| | Workers | Inhalation | Long-term systemic effects | 176 mg/m3 |
| | Workers | Skin contact | Long-term systemic effects | 12 mg/kg BW/d |

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006**

| Substance name | Environmental Compartment | Value |
|---|---|---|
| | Soil | 0.33 mg/kg |
| | Marine water | 0.031 mg/l |
| | Fresh water | 0.31 mg/l |
| | Marine sediment | 0.26 mg/kg |
| | Fresh water sediment | 2.57 mg/kg |
| | Sewage treatment plant | 26 mg/l |

### 8.2 Exposure controls

**Individual protection measures, such as personal protective equipment (PPE)**

Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Safety glasses

Hand protection
- Material : Viton®
- Break through time : 120 min
- Glove thickness : 0.7 mm
- Protective index : Splash contact
- Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)



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| | | |
|---|---|---|
| Remarks | : | This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). |
| Skin and body protection | : | protective clothing |
| Respiratory protection | : | required when vapours/aerosols are generated. |
| Recommended Filter type: | : | Filter AX (EN 371) |

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Environmental exposure controls**

| | | |
|---|---|---|
| Advice | : | Do not let product enter drains. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | liquid (20 °C, 1,013 hPa) |
| Colour | : | colourless |
| Odour | : | ether-like |
| Odour Threshold | : | 250 ppm |
| Melting point/ range | : | -95 °C (1,013 hPa) |
| Boiling point/boiling range | : | 40 °C (1,013 hPa) |
| Flammability | : | No data available |
| Upper explosion limit / Upper flammability limit | : | Upper explosion limit<br>22 %(V) |
| Lower explosion limit / Lower flammability limit | : | Lower explosion limit<br>13 %(V) |
| Flash point | : | does not flash |



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| | | |
|---|---|---|
| Autoignition temperature | : | 556.1 °C |
| Decomposition temperature | : | No data available |
| pH | : | No data available |
| Viscosity | | |
| Viscosity, dynamic | : | 0.42 mPa.s (25 °C) |
| Viscosity, kinematic | : | No data available |
| Flow time | : | No data available |
| Solubility(ies) | | |
| Water solubility | : | 13.2 g/l (25 °C)<br>pH: 7 |
| Partition coefficient: n-octanol/water | : | log Pow: 1.25 (20 °C)<br>pH: 7<br>Method: (experimental)<br>Bioaccumulation is not expected. |
| Vapour pressure | : | 584 hPa (25 °C) |
| Relative density | : | No data available |
| Density | : | 1.33 g/cm3 (20 °C) |
| Relative vapour density | : | 2.93 |
| Particle characteristics | : | No data available |

**9.2 Other information**

| | | |
|---|---|---|
| Explosives | : | Not classified as explosive. |
| Oxidizing properties | : | none |
| Burning rate | : | No data available |
| Self-ignition | : | 605 °C<br>1,013 hPa<br>Method: DIN 51794 |



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| | | |
|---|---|---|
| Evaporation rate | : | 0.71 |
| Refractive index | : | 1.42 at 20 °C<br>589.3 nm |
| Molecular weight | : | 84.93 g/mol |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .
Contains the following stabiliser(s):
2-methyl-2-butene(0.002 %)

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Risk of explosion with:

Alkali metals
nitrogen oxides
nitrogen dioxide
Potassium
sodium azide
perchloric acid
Nitric acid
aluminium chloride
Amines
Oxygen
(as liquefied gas)
powdered aluminium
sodium
aromatic hydrocarbons
with
powdered aluminium
Exothermic reaction with:

Alkaline earth metals
Powdered metals
amides
alcoholates
nonmetallic oxides
potassium tert-butanolate
sodium amide
Lithium

### 10.4 Conditions to avoid

Conditions to avoid : no information available

### 10.5 Incompatible materials



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No data available

### 10.6 Hazardous decomposition products

For Hazardous combustion products in the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**
LD50 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Mouse - 4 h - 86 mg/l - vapour

Remarks: (ECHA)
Symptoms: Possible damages:, mucosal irritations
LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit
Result: Irritations - 4 h
(OECD Test Guideline 404)
Remarks: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: Eye irritation
Remarks: (ECHA)
Remarks: Risk of corneal clouding.

**Respiratory or skin sensitization**
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

**Germ cell mutagenicity**
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: positive

Test Type: In vivo micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Gavage
Method: OECD Test Guideline 474
Result: negative

**Carcinogenicity**
Suspected of causing cancer.



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**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause drowsiness or dizziness. - Central nervous system

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

## 11.2 Additional Information

**Endocrine disrupting properties**

**Product:**

| | |
|---|---|
| Assessment | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |

Repeated dose toxicity - Rat - male and female - Oral - 104 Weeks - No observed adverse effect level - 6 mg/kg

Repeated dose toxicity - Rat - male and female - Inhalation - 104 Weeks

Dizziness, Nausea, Vomiting, narcosis, Cough, irritant effects, Unconsciousness, Shortness of breath, respiratory paralysis, somnolence, depressed respiration, CNS disorders, inebriation
Risk of corneal clouding.
The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.
Dichloromethane is metabolized in the body producing carbon monoxide which increases and sustains carboxyhemoglobin levels in the blood, reducing the oxygen-carrying capacity of the blood.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Systemic effects:

After absorption of large quantities:

CNS disorders
Drowsiness
Dizziness
drop in blood pressure
Cardiac irregularities
depressed respiration
inebriation
Unconsciousness
narcosis

Swallowing may result in damage to the following:

Liver



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Kidney

The following applies to aliphatic halogenated hydrocarbons in general: systemic effect: narcosis, cardiovascular disorders. Toxic effect on liver, kidneys.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Components:**

**Dichloromethane:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): 193.00 mg/l<br>End point: mortality<br>Exposure time: 96 h<br>Test Type: flow-through test<br>Analytical monitoring: yes<br>Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates | : | LC50 (Daphnia magna (Water flea)): 27 mg/l<br>End point: mortality<br>Exposure time: 48 h<br>Test Type: static test<br>Method: US-EPA |
| Toxicity to microorganisms | : | EC50 (activated sludge): 2,590 mg/l<br>Exposure time: 40 min<br>Test Type: static test<br>Analytical monitoring: yes<br>Method: OECD Test Guideline 209 |
| Toxicity to fish (Chronic toxicity) | : | LC50: 471 mg/l<br>End point: mortality<br>Exposure time: 8 d<br>Species: Pimephales promelas (fathead minnow)<br>Test Type: flow-through test<br>Analytical monitoring: yes<br>Remarks: (ECHA) |

### 12.2 Persistence and degradability

**Components:**

**Dichloromethane:**

| | | |
|---|---|---|
| Biodegradability | : | Test Type: aerobic<br>Inoculum: activated sludge, non-adapted<br>Concentration: 5 mg/l<br>Result: Readily biodegradable. |



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Biodegradation: 68 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
GLP: yes

### 12.3 Bioaccumulative potential

**Components:**

**Dichloromethane:**

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 6 Weeks
Concentration: 250 µg/l
Bioconcentration factor (BCF): 2 - 5.4
Method: OECD Test Guideline 305
GLP: yes

Species: Cyprinus carpio (Carp)
Exposure time: 6 Weeks
Concentration: 25 µg/l
Bioconcentration factor (BCF): 6 - 40
Method: OECD Test Guideline 305
GLP: yes

Partition coefficient: n-octanol/water : log Pow: 1.25 (20 °C)
pH: 7
Method: (experimental)
Remarks: Bioaccumulation is not expected.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

**Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Components:**

**Dichloromethane:**

Assessment : Not persistent, bioaccumulative, and toxic (PBT).
Not very persistent and very bioaccumulative (vPvB).

: Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components



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considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

**Components:**

**Dichloromethane:**

Ozone-Depletion Potential : The figures relating to ozone-depleting potential are estimates based on existing knowledge and will be reviewed and revised periodically in the light of decisions taken by the Parties.
Regulation: Regulation (EU) No 2024/590 on substances that deplete the ozone layer (Update: 2024-02-20)
Group: Annex II Ozone-Depleting Substances Referred To In Article 2, Point (A), Not Controlled Under The Protocol

**Regulation (EU) No 2024/590 on substances that deplete the ozone layer**

**Components:**

**Dichloromethane:**

100-year global warming potential: 11.2
Further information: The figures relating to ozone-depleting potential are estimates based on existing knowledge and will be reviewed and revised periodically in the light of decisions taken by the Parties., Annex II Ozone-Depleting Substances Referred To In Article 2, Point (A), Not Controlled Under The Protocol

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Notice Directive on waste 2008/98/EC.

## SECTION 14: Transport information

### 14.1 UN number or ID number

**ADR** : UN 1593

**IMDG** : UN 1593

**IATA** : UN 1593

### 14.2 UN proper shipping name



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| | | |
|---|---|---|
| **ADR** | : | DICHLOROMETHANE |
| **IMDG** | : | DICHLOROMETHANE |
| **IATA** | : | Dichloromethane |

### 14.3 Transport hazard class(es)

| | | Class | Subsidiary risks |
|---|---|---|---|
| **ADR** | : | 6.1 | |
| **IMDG** | : | 6.1 | |
| **IATA** | : | 6.1 | |

### 14.4 Packing group

**ADR**

| | | |
|---|---|---|
| Packing group | : | III |
| Classification Code | : | T1 |
| Hazard Identification Number | : | 60 |
| Labels | : | 6.1 |
| Tunnel restriction code | : | (E) |

**IMDG**

| | | |
|---|---|---|
| Packing group | : | III |
| Labels | : | 6.1 |
| EmS Code | : | F-A, S-A |

**IATA (Cargo)**

| | | |
|---|---|---|
| Packing instruction (cargo aircraft) | : | 663 |
| Packing instruction (LQ) | : | Y642 |
| Packing group | : | III |
| Labels | : | Division 6.1 - Toxic substances |

**IATA_P (Passenger)**

| | | |
|---|---|---|
| Packing instruction (passenger aircraft) | : | 655 |
| Packing instruction (LQ) | : | Y642 |
| Packing group | : | III |
| Labels | : | Division 6.1 - Toxic substances |

### 14.5 Environmental hazards

**ADR**

| | | |
|---|---|---|
| Environmentally hazardous | : | no |

**IMDG**

| | | |
|---|---|---|
| Marine pollutant | : | no |

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.



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### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

| | | |
|---|---|---|
| REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) | : | Conditions of restriction for the following entries must be considered::<br>Number on list 3<br><br>Number on list 59:<br>Dichloromethane<br><br>Number on list 75<br>If you intend to use this product as tattoo ink, please contact your vendor. |
| REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). | : | Not applicable |
| Regulation (EU) No 2024/590 on substances that deplete the ozone layer | : | Dichloromethane |
| Regulation (EU) 2019/1021 on persistent organic pollutants (recast) | : | Not applicable |
| REACH - List of substances subject to authorisation (Annex XIV) | : | Not applicable |
| Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. | | Not applicable |

**Other regulations:**

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.



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## SECTION 16: Other information

### Relevant changes since previous version

Annex

### Full text of H-Statements

| | | |
|---|---|---|
| H336 | : | May cause drowsiness or dizziness. |

### Full text of other abbreviations

| | | |
|---|---|---|
| Carc. | : | Carcinogenicity |
| Eye Irrit. | : | Eye irritation |
| Skin Irrit. | : | Skin irritation |
| STOT SE | : | Specific target organ toxicity - single exposure |
| STOT SE | : | Specific target organ toxicity - single exposure |
| 2017/164/EU | : | Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values |
| IE OEL | : | Ireland. List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2 |
| 2017/164/EU / STEL | : | Short term exposure limit |
| 2017/164/EU / TWA | : | Limit Value - eight hours |
| IE OEL / OELV - 8 hrs (TWA) | : | Occupational exposure limit value (8-hour reference period) |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; BGW - Biological Limit Values; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LSPN - List of Hazardous Notified Substances (Chile); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations



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concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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IE / EN



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**Annex: Exposure scenario**

**Identified uses:**

**Use: Manufacturing and on-site use**

| |
|---|
| **SU0:** Other |
| **PROC1:** Use in closed process, no likelihood of exposure |
| **ERC1:** Manufacture of substances |

**Use: Industrial use**

| |
|---|
| **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **SU8, SU9:** Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals |
| **PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities |
| **ERC6a:** Industrial use resulting in manufacture of another substance (use of intermediates) |

**Use: Industrial use**

| |
|---|
| **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **SU8, SU9:** Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals |
| **PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC15:** Use as laboratory reagent |
| **ERC6a:** Industrial use resulting in manufacture of another substance (use of intermediates) |

**Use: Used as laboratory reagent**

| |
|---|
| **SU0:** Other |
| **PROC8a:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities<br>**PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing)<br>**PROC15:** Use as laboratory reagent |
| **ERC8a:** Wide dispersive indoor use of processing aids in open systems |

**Use: Used as laboratory reagent**

| |
|---|
| **SU0:** Other |
| **PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities |
| **ERC8a:** Wide dispersive indoor use of processing aids in open systems |

**Use: Manufacturing and on-site use**



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| |
|---|
| **SU0:** Other |
| **PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8a:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| **ERC1:** Manufacture of substances |

**Use: Manufacturing and on-site use**

| |
|---|
| **SU0:** Other |
| **PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC15:** Use as laboratory reagent |
| **ERC1:** Manufacture of substances |

**Use: Formulation of preparations**

| |
|---|
| **SU0:** Other |
| **PC1:** Adhesives, sealants<br>**PC9a:** Coatings and paints, thinners, paint removers |
| **PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC15:** Use as laboratory reagent |
| **ERC2:** Formulation of preparations |

**Use: Formulation of preparations**

| |
|---|
| **SU0:** Other |
| **PC1:** Adhesives, sealants<br>**PC9a:** Coatings and paints, thinners, paint removers |
| **PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC5:** Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)<br>**PROC8a:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**PROC9:** Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| **ERC2:** Formulation of preparations |

**Use: Industrial use**

| |
|---|
| **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **SU0:** Other |
| **PROC1:** Use in closed process, no likelihood of exposure |
| **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles |



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**Use: Industrial use**

| |
|---|
| **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **SU0:** Other |
| **PROC2:** Use in closed, continuous process with occasional controlled exposure<br>**PROC4:** Use in batch and other process (synthesis) where opportunity for exposure arises<br>**PROC8b:** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities<br>**PROC10:** Roller application or brushing |
| **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles |

**Use: Industrial use**

| |
|---|
| **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **SU0:** Other |
| **PROC3:** Use in closed batch process (synthesis or formulation)<br>**PROC15:** Use as laboratory reagent |
| **ERC4:** Industrial use of processing aids in processes and products, not becoming part of articles |

**Use: Industrial use**

| |
|---|
| **SU 3:** Industrial uses: Uses of substances as such or in preparations at industrial sites |
| **SU8, SU9:** Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals |
| **PROC1:** Use in closed process, no likelihood of exposure |
| **ERC6a:** Industrial use resulting in manufacture of another substance (use of intermediates) |



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## 1. Short title of Exposure Scenario: Manufacturing and on-site use

Sectors of end-use : **SU0**
Process categories : **PROC1**
Environmental Release Categories : **ERC1:**

## 2. Exposure scenario

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

### Workers

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC1 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.034 mg/kg BW/d | 0.003 |
| PROC1 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 0.035 mg/m³ | 0 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

## 1. Short title of Exposure Scenario: Industrial use

Main User Groups : **SU 3**
Sectors of end-use : **SU8, SU9**
Process categories : **PROC2, PROC4, PROC8a, PROC8b**



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Environmental Release Categories : **ERC6a:**

## 2. Exposure scenario

### 2.1 Contributing scenario controlling environmental exposure for: ERC6a

**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

### 2.2 Contributing scenario controlling worker exposure for: PROC2, PROC4, PROC8a, PROC8b

**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

**Frequency and duration of use**

Application duration : > 4 h

Frequency of use : 0 days/year

**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

**Technical conditions and measures**

Provide adequate ventilation., Good work practice required.

**Organisational measures to prevent /limit releases, dispersion and exposure**

Ensure operatives are trained to minimise exposures.

**Conditions and measures related to personal protection, hygiene and health evaluation**

Use suitable eye protection and gloves., For personal protection see section 8.

## 3. Exposure estimation and reference to its source

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC2 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.137 mg/kg BW/d | 0.011 |
| PROC2 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC4 | ECETOC TRA | With Local Exhaust | Inhalation | 35.38 mg/m³ | 0.201 |



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| | | | | | |
|---|---|---|---|---|---|
| | | Ventilation | | | |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26.54 mg/m³ | 0.151 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |

*Risk characterisation ratio

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

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**1. Short title of Exposure Scenario: Industrial use**

---

Main User Groups : **SU 3**
Sectors of end-use : **SU8, SU9**
Process categories : **PROC3, PROC15**
Environmental Release Categories : **ERC6a:**

**2. Exposure scenario**

**2.1 Contributing scenario controlling environmental exposure for: ERC6a**

**Product characteristics**
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

**2.2 Contributing scenario controlling worker exposure for: PROC3, PROC15**

**Product characteristics**
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid substance

**Frequency and duration of use**
Application duration : 1 - 4 h
Frequency of use : 0 days/year

**Other operational conditions affecting workers exposure**
Outdoor / Indoor : Indoor



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**Technical conditions and measures**
Provide adequate ventilation., Good work practice required.

**Organisational measures to prevent /limit releases, dispersion and exposure**
Ensure operatives are trained to minimise exposures.

**Conditions and measures related to personal protection, hygiene and health evaluation**
Use suitable eye protection and gloves., For personal protection see section 8.

## 3. Exposure estimation and reference to its source

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.021 mg/kg BW/d | 0.002 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.01 mg/kg BW/d | 0.001 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

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## 1. Short title of Exposure Scenario: Used as laboratory reagent

---

Sectors of end-use : **SU0**
Process categories : **PROC8a, PROC9, PROC15**
Environmental Release Categories : **ERC8a:**



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## 2. Exposure scenario

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

### Workers

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 70.77 mg/m³ | 0.402 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.01 mg/kg BW/d | 0.001 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

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## 1. Short title of Exposure Scenario: Used as laboratory reagent

---

Sectors of end-use : **SU0**
Process categories : **PROC8b**
Environmental Release Categories : **ERC8a:**



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## 2. Exposure scenario

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

### Workers

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26.54 mg/m³ | 0.151 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

---

## 1. Short title of Exposure Scenario: Manufacturing and on-site use

---

Sectors of end-use : **SU0**
Process categories : **PROC2, PROC4, PROC8a, PROC8b, PROC9**
Environmental Release Categories : **ERC1:**

## 2. Exposure scenario

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).



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**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC2 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.137 mg/kg BW/d | 0.011 |
| PROC2 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 35.38 mg/m³ | 0.201 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26.54 mg/m³ | 0.151 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 70.77 mg/m³ | 0.402 |

*Risk characterisation ratio

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

---

**1. Short title of Exposure Scenario: Manufacturing and on-site use**

---

Sectors of end-use : **SU0**
Process categories : **PROC3, PROC15**
Environmental Release Categories : **ERC1:**



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## 2. Exposure scenario

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

### Workers

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.021 mg/kg BW/d | 0.002 |
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.01 mg/kg BW/d | 0.001 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

---

## 1. Short title of Exposure Scenario: Formulation of preparations

---

Sectors of end-use : **SU0**
Chemical product category : **PC1, PC9a**
Process categories : **PROC3, PROC15**
Environmental Release Categories : **ERC2:**

## 2. Exposure scenario

## 3. Exposure estimation and reference to its source



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**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.021 mg/kg BW/d | 0.002 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.01 mg/kg BW/d | 0.001 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |

*Risk characterisation ratio

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

---

**1. Short title of Exposure Scenario: Formulation of preparations**

---

Sectors of end-use : **SU0**
Chemical product category : **PC1, PC9a**
Process categories : **PROC4, PROC5, PROC8a, PROC8b, PROC9**
Environmental Release Categories : **ERC2:**

**2. Exposure scenario**

**3. Exposure estimation and reference to its source**

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).



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**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 35.38 mg/m³ | 0.201 |
| PROC5 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC5 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8a | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26.54 mg/m³ | 0.151 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 70.77 mg/m³ | 0.402 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |

*Risk characterisation ratio

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

---

**1. Short title of Exposure Scenario: Industrial use**

---

Main User Groups : **SU 3**
Sectors of end-use : **SU0**
Process categories : **PROC1**
Environmental Release Categories : **ERC4:**



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## 2. Exposure scenario

### 2.1 Contributing scenario controlling environmental exposure for: ERC4

**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

### 2.2 Contributing scenario controlling worker exposure for: PROC1

**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

**Frequency and duration of use**

Application duration : > 4 h

Frequency of use : 0 days/year

**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

**Technical conditions and measures**

Provide adequate ventilation., Good work practice required.

**Organisational measures to prevent /limit releases, dispersion and exposure**

Ensure operatives are trained to minimise exposures.

**Conditions and measures related to personal protection, hygiene and health evaluation**

For personal protection see section 8.

## 3. Exposure estimation and reference to its source

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC1 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 0.035 mg/m³ | 0 |
| PROC1 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.034 mg/kg BW/d | 0.003 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario



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Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

## 1. Short title of Exposure Scenario: Industrial use

| | | |
|---|---|---|
| Main User Groups | : | **SU 3** |
| Sectors of end-use | : | **SU0** |
| Process categories | : | **PROC2, PROC4, PROC8b, PROC10** |
| Environmental Release Categories | : | **ERC4:** |

## 2. Exposure scenario

### 2.1 Contributing scenario controlling environmental exposure for: ERC4

**Product characteristics**

| | | |
|---|---|---|
| Concentration of the Substance in Mixture/Article | : | Covers the percentage of the substance in the product up to 100 % (unless stated differently). |

### 2.2 Contributing scenario controlling worker exposure for: PROC2, PROC4, PROC8b, PROC10

**Product characteristics**

| | | |
|---|---|---|
| Concentration of the Substance in Mixture/Article | : | Covers the percentage of the substance in the product up to 100 % (unless stated differently). |
| Physical Form (at time of use) | : | Liquid substance |

**Frequency and duration of use**

| | | |
|---|---|---|
| Application duration | : | > 4 h |
| Frequency of use | : | 0 days/year |

**Other operational conditions affecting workers exposure**

| | | |
|---|---|---|
| Outdoor / Indoor | : | Indoor |

**Technical conditions and measures**

Provide adequate ventilation., Good work practice required.

**Organisational measures to prevent /limit releases, dispersion and exposure**

Ensure operatives are trained to minimise exposures.

**Conditions and measures related to personal protection, hygiene and health evaluation**

Use suitable eye protection and gloves., For personal protection see section 8.

## 3. Exposure estimation and reference to its source

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).



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**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC2 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 88.47 mg/m³ | 0.503 |
| PROC2 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.137 mg/kg BW/d | 0.011 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0.686 mg/kg BW/d | 0.057 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 35.38 mg/m³ | 0.201 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26.54 mg/m³ | 0.151 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 1.371 mg/kg BW/d | 0.114 |

*Risk characterisation ratio

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

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**1. Short title of Exposure Scenario: Industrial use**

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Main User Groups : **SU 3**
Sectors of end-use : **SU0**
Process categories : **PROC3, PROC15**
Environmental Release Categories : **ERC4:**

**2. Exposure scenario**

**2.1 Contributing scenario controlling environmental exposure for: ERC4**

**Product characteristics**
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

**2.2 Contributing scenario controlling worker exposure for: PROC3, PROC15**

**Product characteristics**
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).



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Physical Form (at time of use) : Liquid substance

**Frequency and duration of use**
Application duration : 1 - 4 h
Frequency of use : 0 days/year

**Other operational conditions affecting workers exposure**
Outdoor / Indoor : Indoor

**Technical conditions and measures**
Provide adequate ventilation., Good work practice required.

**Organisational measures to prevent /limit releases, dispersion and exposure**
Ensure operatives are trained to minimise exposures.

**Conditions and measures related to personal protection, hygiene and health evaluation**
Use suitable eye protection and gloves., For personal protection see section 8.

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

### Workers

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.021 mg/kg BW/d | 0.002 |
| PROC3 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 106.1 mg/m³ | 0.603 |
| PROC15 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.01 mg/kg BW/d | 0.001 |

*Risk characterisation ratio

## 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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## 1. Short title of Exposure Scenario: Industrial use

| | | |
|---|---|---|
| Main User Groups | : | **SU 3** |
| Sectors of end-use | : | **SU8, SU9** |
| Process categories | : | **PROC1** |
| Environmental Release Categories | : | **ERC6a:** |

## 2. Exposure scenario

### 2.1 Contributing scenario controlling environmental exposure for: ERC6a

**Product characteristics**

| | | |
|---|---|---|
| Concentration of the Substance in Mixture/Article | : | Covers the percentage of the substance in the product up to 100 % (unless stated differently). |

### 2.2 Contributing scenario controlling worker exposure for: PROC1

**Product characteristics**

| | | |
|---|---|---|
| Concentration of the Substance in Mixture/Article | : | Covers the percentage of the substance in the product up to 100 % (unless stated differently). |
| Physical Form (at time of use) | : | Liquid substance |

**Frequency and duration of use**

| | | |
|---|---|---|
| Application duration | : | 1 - 4 h |
| Frequency of use | : | 0 days/year |

**Other operational conditions affecting workers exposure**

| | | |
|---|---|---|
| Outdoor / Indoor | : | Indoor |

**Technical conditions and measures**

Provide adequate ventilation., Good work practice required.

**Organisational measures to prevent /limit releases, dispersion and exposure**

Ensure operatives are trained to minimise exposures.

**Conditions and measures related to personal protection, hygiene and health evaluation**

For personal protection see section 8.

## 3. Exposure estimation and reference to its source

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|---|---|---|---|---|---|
| PROC1 | ECETOC TRA | Without Local Exhaust Ventilation | Inhalation | 0.035 mg/m³ | 0 |



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| | | | | | |
|---|---|---|---|---|---|
| PROC1 | ECETOC TRA | Without Local Exhaust Ventilation | Dermal | 0.034 mg/kg BW/d | 0.003 |

*Risk characterisation ratio

**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).



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