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

1.1 Product identifier

Identification of the substance: 2-Butanone
Article number: 8403
Registration number (REACH): 01-2119457290-43-xxxx
Index No: 606-002-00-3
EC number: 201-159-0
CAS number: 78-93-3

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

Identified uses: laboratory chemical

1.3 Details of the supplier of the safety data sheet

Competent person responsible for the safety data sheet: Department Health, Safety and Environment
E-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

Emergency information service: Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6</td>
<td>flammable liquid</td>
<td>(Flam. Liq. 2)</td>
<td>H225</td>
</tr>
<tr>
<td>3.2</td>
<td>skin corrosion/irritation</td>
<td>(Skin Irrit. 2)</td>
<td>H315</td>
</tr>
<tr>
<td>3.3</td>
<td>serious eye damage/eye irritation</td>
<td>(Eye Irrit. 2B)</td>
<td>H320</td>
</tr>
<tr>
<td>3.8</td>
<td>specific target organ toxicity - single exposure</td>
<td>(STOT SE 1)</td>
<td>H370</td>
</tr>
<tr>
<td>3.8D</td>
<td>specific target organ toxicity - single exposure (narcotic effects, drowsiness)</td>
<td>(STOT SE 3)</td>
<td>H336</td>
</tr>
<tr>
<td>3.9</td>
<td>specific target organ toxicity - repeated exposure</td>
<td>(STOT RE 1)</td>
<td>H372</td>
</tr>
</tbody>
</table>
For full text of Hazard- and EU Hazard-statements: see SECTION 16.

Narcotic effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Danger

Pictograms

Hazard statements

H225 Highly flammable liquid and vapour.
H315+H320 Causes skin and eye irritation.
H336 May cause drowsiness or dizziness.
H370 Causes damage to organs (central nervous system).
H372 Causes damage to organs (central nervous system) through prolonged or repeated exposure.

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

Precautionary statements - 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+P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.

Precautionary statements - storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.

Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Symbol(s)
2-Butanone ≥99.5 %, for synthesis

article number: 8403

H320 Causes eye irritation.
H370 Causes damage to organs (central nervous system).
H372 Causes damage to organs (central nervous system) through prolonged or repeated exposure.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazards
There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance: methyl ethyl ketone
Index No: 606-002-00-3
Registration number (REACH): 01-2119457290-43-xxxx
EC number: 201-159-0
CAS number: 78-93-3
Molecular formula: C₄H₈O
Molar mass: 72.11 g/mol

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

Following skin contact
Rinse skin with water/shower. Use barrier cream. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact
Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion
Rinse mouth. Do not induce vomiting. Aspiration hazard. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed
Irritant effects, Cough, Drowsiness, Dizziness, Vertigo, Dyspnoea, Nausea, Vomiting, Narcosis, Causes slight to moderate irritation
2-Butanone ≥99.5 %, for synthesis

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4.3 Indication of any immediate medical attention and special treatment needed
none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
Combustible. Vapours can form explosive mixtures with air.

Hazardous combustion products
In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters
Vapours are heavier than air. Beware of reignition. Fight fire with normal precautions from a reason-
able distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Do not breathe vapour/spray. Avoid contact with skin, eyes and clothes. Eliminate all ignition sources
if safe to do so.

6.2 Environmental precautions
Keep away from drains, surface and ground water. Explosive properties.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill
Covering of drains.

Advices on how to clean up a spill
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

Reference to other sections
Hazardous combustion products: see section 5. Personal protective equipment: see section 8.
Incompatible materials: see section 10. Disposal considerations: see section 13.
2-Butanone ≥99.5 %, for synthesis

article number: 8403

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Use extractor hood (laboratory). Avoid exposure.

• Measures to prevent fire as well as aerosol and dust generation

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Advice on general occupational hygiene
When using do not eat, drink or smoke. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice
Ground/bond container and receiving equipment.

• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
15 - 25 °C.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Identifier</th>
<th>TWA [ppm]</th>
<th>TWA [mg/m³]</th>
<th>STEL [ppm]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP</td>
<td>methyl ethyl ketone</td>
<td>78-93-3</td>
<td>OEL</td>
<td>200</td>
<td>590</td>
<td></td>
<td></td>
<td>JSOH</td>
</tr>
</tbody>
</table>

Notation

- STEL: Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified.
- TWA: Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average.

Relevant DNELs/DMELs/PNECs and other threshold levels

• human health values
Use safety goggles with side protection.

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Butyl caoutchouc (butyl rubber)

0.7 mm.

> 240 minutes (permeation: level 5)

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Flame-retardant protective clothing.

Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown). Observe the wear time limits according to GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL</td>
<td>1.161 mg/kg</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>600 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
</tbody>
</table>

**Environmental values**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEC</td>
<td>55.8 mg/cm³</td>
<td>marine water</td>
</tr>
<tr>
<td>PNEC</td>
<td>55.8 mg/cm³</td>
<td>air</td>
</tr>
<tr>
<td>PNEC</td>
<td>285 mg/cm³</td>
<td>freshwater sediment</td>
</tr>
<tr>
<td>PNEC</td>
<td>55.8 mg/cm³</td>
<td>freshwater</td>
</tr>
<tr>
<td>PNEC</td>
<td>709 mg/cm³</td>
<td>sewage treatment plant (STP)</td>
</tr>
<tr>
<td>PNEC</td>
<td>22.5 mg/cm³</td>
<td>soil</td>
</tr>
</tbody>
</table>

**8.2 Exposure controls**

**Individual protection measures (personal protective equipment)**

**Eye/face protection**

Use safety goggles with side protection.

**Skin protection**

**Hand protection**

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Type of material**

Butyl caoutchouc (butyl rubber)

**Material thickness**

0.7 mm.

**Breakthrough times of the glove material**

> 240 minutes (permeation: level 5)

**Other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Flame-retardant protective clothing.

**Respiratory protection**

Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown). Observe the wear time limits according to GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).
## 2-Butanone ≥99.5%, for synthesis

**article number:** 8403

### Environmental exposure controls
Keep away from drains, surface and ground water.

### SECTION 9: Physical and chemical properties

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

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid (fluid)</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>like: Acetone</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Other physical and chemical parameters**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-86 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>79 - 80 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>-8 °C (closed cup)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant (fluid)</td>
</tr>
</tbody>
</table>

**Explosive limits**

- lower explosion limit (LEL) 1.5 vol%  
- upper explosion limit (UEL) 11.5 vol%  

**Explosion limits of dust clouds**

- not relevant

**Vapour pressure**

- 105 hPa at 20 °C

**Density**

- 0.81 g/cm³ at 20 °C

**Vapour density**

- 2.48 (air = 1)

**Bulk density**

- Not applicable

**Relative density**

- Information on this property is not available.

**Solubility(ies)**

- Water solubility: ~ 290 g/l at 20 °C

**Partition coefficient**

- n-octanol/water (log KOW): 0.29 (exp.) (TOXNET)

**Auto-ignition temperature**

- 475 °C - (DIN 51794)

**Decomposition temperature**

- no data available
2-Butanone ≥99,5 %, for synthesis

article number: 8403

Viscosity

- dynamic viscosity 0,4 mPa s at 20 °C

Explosive properties

shall not be classified as explosive

Oxidising properties

none

SECTION 10: Stability and reactivity

10.1 Reactivity

risk of ignition. May form explosive peroxides.

10.2 Chemical stability

Reactivity if exposed to light. Reactivity if exposed to air.

10.3 Possibility of hazardous reactions

Exothermic reaction with: Alkali hydroxide (caustic alkali), Chromium(VI) oxide, Oxidisers,
Violent reaction with: Nitric acid, Sulphuric acid, concentrated, Hydrogen peroxide => Explosive properties

10.4 Conditions to avoid

Direct light irradiation. Keep away from heat.

10.5 Incompatible materials

different plastics

10.6 Hazardous decomposition products

Peroxides.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>2.740 mg/kg</td>
<td>rat</td>
<td>TOXNET</td>
</tr>
<tr>
<td>dermal</td>
<td>LD50</td>
<td>6.480 mg/kg</td>
<td>rabbit</td>
<td>TOXNET</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant
2-Butanone ≥99,5 %, for synthesis

article number: 8403

- Specific target organ toxicity - single exposure
  Causes damage to organs (central nervous system). May cause drowsiness or dizziness.
- Specific target organ toxicity - repeated exposure
  Causes damage to organs (central nervous system) through prolonged or repeated exposure.

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

- If swallowed
  nausea, vomiting, presenting an aspiration hazard

- If in eyes
  data are not available

- If inhaled
  irritant effects, cough, vertigo, dizziness, Respiratory complaints, narcosis, pulmonary oedema

- If on skin
  Frequently or prolonged contact with skin may cause dermal irritation. risk of absorption via the skin

Other adverse effects: Heart-Liver and kidney damage.

SECTION 12: Ecological information

12.1 Toxicity
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>2.990 mg/l</td>
<td>Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td>EC50</td>
<td>308 mg/l</td>
<td>daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td>ErC50</td>
<td>1.972 mg/l</td>
<td>Pseudokirchneriella subcapitata</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

12.2 Process of degradability
The substance is readily biodegradable.
Theoretical Oxygen Demand: 2,440 mg/g
Theoretical Carbon Dioxide: 2,441 mg/mg

<table>
<thead>
<tr>
<th>Process</th>
<th>Degradation rate</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>oxygen depletion</td>
<td>98 %</td>
<td>28 d</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential
Does not significantly accumulate in organisms.
n-octanol/water (log KOW) 0,29

12.4 Mobility in soil
Data are not available.
12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Other adverse effects
Slightly hazardous to water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information
Do not empty into drains.

Waste treatment of containers/packagings
It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks
Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number
1193

14.2 UN proper shipping name
ETHYL METHYL KETONE

14.3 Transport hazard class(es)
Hazardous ingredients
2-Butanone

Class
3 (flammable liquids)

14.4 Packing group
II (substance presenting medium danger)

14.5 Environmental hazards
none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user
Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

- Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)
  
  UN number
  1193

  Proper shipping name
  ETHYL METHYL KETONE

  Particulars in the transport document
  UN1193, ETHYL METHYL KETONE, 3, II, (D/E)

  Class
  3

  Classification code
  F1

  Packing group
  II

  Danger label(s)
  3
safety data sheet
according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

2-Butanone ≥99.5 %, for synthesis

article number: 8403

Excepted quantities (EQ) | E2
Limited quantities (LQ) | 1 L
Transport category (TC) | 2
Tunnel restriction code (TRC) | D/E
Hazard identification No | 33

• International Maritime Dangerous Goods Code (IMDG)

UN number | 1193
Proper shipping name | ETHYL METHYL KETONE
Particulars in the shipper’s declaration | UN1193, ETHYL METHYL KETONE, 3, II, -8°C c.c.
Class | 3
Packing group | II
Danger label(s) | 3

Special provisions (SP) | -
Excepted quantities (EQ) | E2
Limited quantities (LQ) | 1 L
EmS | F-E, S-D
Stowage category | B

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

• Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)
  Not listed.
• Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)
  Not listed.
• Regulation 850/2004/EC on persistent organic pollutants (POP)
  Not listed.
2-Butanone ≥99.5 %, for synthesis

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• Restrictions according to REACH, Annex XVII
  not listed

• List of substances subject to authorisation (REACH, Annex XIV)
  not listed

• Seveso Directive

<table>
<thead>
<tr>
<th>2012/18/EU (Seveso III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>P5c</td>
</tr>
</tbody>
</table>

Notation
51) Flammable liquids, categories 2 or 3 not covered by P5a and P5b

• Limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products (2004/42/EC, Deco-Paint Directive)
  VOC content 100 %

• Directive on industrial emissions (VOCs, 2010/75/EU)
  VOC content 100 %

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II
  not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)
  not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
  not listed

National inventories
Substance is listed in the following national inventories:
- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out for this substance.
### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DMEL</td>
<td>Derived Minimal Effect Level</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>EmS</td>
<td>Emergency Schedule</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>Index No</td>
<td>the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>OEL</td>
<td>workplace exposure limit</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No-Effect Concentration</td>
</tr>
<tr>
<td>ppm</td>
<td>parts per million</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>STEL</td>
<td>short-term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>time-weighted average</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

### Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

List of relevant phrases (code and full text as stated in chapter 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>highly flammable liquid and vapour</td>
</tr>
<tr>
<td>H315</td>
<td>causes skin irritation</td>
</tr>
<tr>
<td>H320</td>
<td>causes eye irritation</td>
</tr>
<tr>
<td>H336</td>
<td>may cause drowsiness or dizziness</td>
</tr>
<tr>
<td>H370</td>
<td>causes damage to organs (central nervous system)</td>
</tr>
<tr>
<td>H372</td>
<td>causes damage to organs (central nervous system) through prolonged or repeated exposure</td>
</tr>
</tbody>
</table>

Disclaimer

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