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

1.1 Product identifier

Identification of the substance: 3-methylbutan-1-ol

Article number: T870

Registration number (REACH): 01-2119493725-26-xxxx

Index No: 603-006-00-7

EC number: 204-633-5

CAS number: 123-51-3

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

Carl Roth GmbH + Co KG

Schoemperlenstr. 3-5

D-76185 Karlsruhe

Germany

Telephone: +49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

Competent person's e-mail: 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>Classification acc. to GHS</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. 3)</td>
<td>H226</td>
</tr>
<tr>
<td>3.11</td>
<td>acute toxicity (inhal.)</td>
<td>(Acute Tox. 4)</td>
<td>H332</td>
</tr>
<tr>
<td>3.8R</td>
<td>specific target organ toxicity - single exposure (respiratory tract irritation)</td>
<td>(STOT SE 3)</td>
<td>H335</td>
</tr>
</tbody>
</table>
Isoamyl alcohol ROTIPURAN® ≥98,5 %, p.a., ACS

article number: T870

### Supplemental hazard information

<table>
<thead>
<tr>
<th>Code</th>
<th>Supplemental hazard information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUH066</td>
<td>repeated exposure may cause skin dryness or cracking</td>
</tr>
</tbody>
</table>

### Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

### 2.2 Label elements

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

#### Signal word

**Warning**

#### Pictograms

- [Flammable liquid and vapour]
- [Hazardous substance]

#### Hazard statements

- H226: Flammable liquid and vapour.
- H332: Harmful if inhaled.
- H335: May cause respiratory irritation.

#### Precautionary statements

**Precautionary statements - prevention**

- P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P280: Wear protective clothing/eye protection.

**Precautionary statements - response**

- P303+P361+P353: IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312: Call a POISON CENTER/doctor if you feel unwell.

**Precautionary statements - storage**

- P403+P235: Store in a well-ventilated place. Keep cool.

**Supplemental hazard information**

- EUH066: Repeated exposure may cause skin dryness or cracking.

*Labelling of packages where the contents do not exceed 125 ml*

**Signal word:** Warning

**Symbol(s):**

- [Flammable liquid and vapour]
- [Hazardous substance]
There is no additional information.

2.3 Other hazards
There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>3-methylbutan-1-ol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No</td>
<td>603-006-00-7</td>
</tr>
<tr>
<td>Registration number (REACH)</td>
<td>01-2119493725-26-xxxx</td>
</tr>
<tr>
<td>EC number</td>
<td>204-633-5</td>
</tr>
<tr>
<td>CAS number</td>
<td>123-51-3</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C5H12O</td>
</tr>
<tr>
<td>Molar mass</td>
<td>88 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower.

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. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

After eye contact: Conjunctival redness of the eyes, Conjunctivitis (pink eye), Corneal opacity,
Following skin contact: Pruritis, Localised redness, Has degreasing effect on the skin,
After ingestion: Irritant effects, Nausea, Vomiting,
Following inhalation: Cough, pain, choking, and breathing difficulties
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 are heavier than air, spread along floors and form explosive mixtures with air.
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
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

Special protective equipment for firefighters
Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles.
Self-contained breathing apparatus (SCBA). Self-contained breathing apparatus (EN 133).

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.
Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

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.
Provision of sufficient ventilation.

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed.

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
Recommended storage temperature: 15 - 25 °C.

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>Notation</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>GB</td>
<td>3-methylbutan-1-ol</td>
<td>123-51-3</td>
<td>WEL</td>
<td>100</td>
<td>366</td>
<td>125</td>
<td>458</td>
<td>EH40/2005</td>
<td></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
Isoamyl alcohol ROTIPURAN® ≥98,5 %, p.a., ACS

article number: T870

### 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.

---

**Endpoint** | **Threshold level** | **Protection goal, route of exposure** | **Used in** | **Exposure time**
---|---|---|---|---
DNEL | 73,16 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects
DNEL | 292 mg/m³ | human, inhalatory | worker (industry) | acute - systemic effects
DNEL | 73,16 mg/m³ | human, inhalatory | worker (industry) | chronic - local effects
DNEL | 292 mg/m³ | human, inhalatory | worker (industry) | acute - local effects

**environmental values**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
</table>
PNEC | 0,105 mg/cm³ | marine sediment | continuous |
PNEC | 0,0255 mg/cm³ | marine water | continuous |
PNEC | 37 mg/cm³ | air | continuous |
PNEC | 1,05 mg/cm³ | freshwater sediment | continuous |
PNEC | 0,255 mg/cm³ | freshwater | continuous |
PNEC | 0,061 mg/cm³ | soil | continuous |
PNEC | 0,255 mg/l | freshwater | short-term (single instance) |
PNEC | 0,025 mg/l | marine water | short-term (single instance) |
PNEC | 2,55 mg/l | water | continuous |
PNEC | 37 mg/l | sewage treatment plant (STP) | short-term (single instance) |
PNEC | 1,05 mg/kg | freshwater sediment | short-term (single instance) |
PNEC | 0,105 mg/kg | marine sediment | short-term (single instance) |
PNEC | 0,061 mg/kg | soil | short-term (single instance) |
**NBR (Nitrile rubber)**

>0,11 mm.

>480 minutes (permeation: level 6)

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

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).

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>Physical state</th>
<th>liquid (fluid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Other physical and chemical parameters**

<table>
<thead>
<tr>
<th>pH (value)</th>
<th>7 (25 °C, 20 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/freezing point</td>
<td>-147 °C at 1.013 hPa</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>130,7 °C at 1.013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>43,5 °C at 1.013 hPa</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) 1,2 vol% (44 g/m³)
- upper explosion limit (UEL) 10,5 vol% (385 g/m³)

Explosion limits of dust clouds not relevant

Vapour pressure 3 hPa at 20 °C

Density 0,81 g/cm³ at 20 °C

Vapour density 3,04 (air = 1)

Bulk density Not applicable

Relative density Information on this property is not available.
**Isoamyl alcohol ROTIPURAN® ≥98,5 %, p.a., ACS**

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**Solubility(ies)**

- Water solubility: 30 %/l at 20 °C

**Partition coefficient**

- n-octanol/water (log KOW): 1,35 (pH value: 6,5) (ECHA)
- Soil organic carbon/water (log KOC): 0,726 (ECHA)

**Auto-ignition temperature**: 335 °C - ECHA

**Decomposition temperature**: no data available

**Viscosity**

- dynamic viscosity: 4,3 mPa s at 20 °C

**Explosive properties**: none

**Oxidising properties**: none

**9.2 Other information**

- Refractive index: 1,406
- Temperature class (EU, acc. to ATEX): T2 (Maximum permissible surface temperature on the equipment: 300°C)

**SECTION 10: Stability and reactivity**

**10.1 Reactivity**

Risk of ignition. In case of warming: Vapours can form explosive mixtures with air.

**10.2 Chemical stability**

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**10.3 Possibility of hazardous reactions**

Danger of explosion: Chlorine, Hydrogen peroxide, Sulphuric acid, Violent reaction with: Alkali metals, Alkaline earth metal, Oxygen, Strong oxidiser

**10.4 Conditions to avoid**

There are no specific conditions known which have to be avoided.

**10.5 Incompatible materials**

There is no additional information.

**10.6 Hazardous decomposition products**

Hazardous combustion products: see section 5.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Harmful in contact with skin.

<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>&gt;5000 mg/kg</td>
<td>rat</td>
<td>ECHA</td>
</tr>
<tr>
<td>dermal</td>
<td>LD50</td>
<td>3216 mg/kg</td>
<td>rabbit</td>
<td>ECHA</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

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

• Specific target organ toxicity - single exposure
May cause respiratory irritation.

• Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

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

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed
vomiting, abdominal pain, nausea

• If in eyes
corneal opacity, conjunctivitis (pink eye), causes tears

• If inhaled
cough, pain, choking, and breathing difficulties

• If on skin
has degreasing effect on the skin, localised redness, Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation)

Other information
None
**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>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>700 mg/l</td>
<td>fish</td>
<td>ECHA</td>
<td>96 h</td>
</tr>
<tr>
<td>EC50</td>
<td>255 mg/l</td>
<td>aquatic invertebrates</td>
<td>ECHA</td>
<td>48 h</td>
</tr>
<tr>
<td>ErC50</td>
<td>&gt;500 mg/l</td>
<td>algae</td>
<td>ECHA</td>
<td>72 h</td>
</tr>
</tbody>
</table>

**Aquatic toxicity (chronic)**

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>320 mg/l</td>
<td>aquatic invertebrates</td>
<td>ECHA</td>
<td>24 h</td>
</tr>
</tbody>
</table>

### 12.2 Process of degradability
The substance is readily biodegradable.
Theoretical Oxygen Demand: 2,727 mg/mg
Theoretical Carbon Dioxide: 2,501 mg/mg
Biochemical Oxygen Demand: 1,5 g/l

**Degradation rate**

<table>
<thead>
<tr>
<th>Process</th>
<th>Degradation rate</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>biotic/abiotic</td>
<td>84 %</td>
<td>27 d</td>
</tr>
<tr>
<td>oxygen depletion</td>
<td>84 %</td>
<td>27 d</td>
</tr>
</tbody>
</table>

### 12.3 Bioaccumulative potential
Does not significantly accumulate in organisms.
n-octanol/water (log KOW) 1,35 (pH value: 6,5)

### 12.4 Mobility in soil
Henry's law constant 1,34 Pa m³/mol at 25 °C
The Organic Carbon normalised adsorption coefficient 0,726

### 12.5 Results of PBT and vPvB assessment
Data are not available.

### 12.6 Other adverse effects
Slightly hazardous to water.
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations. Do not empty into drains. It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. 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. Provisions for dangerous goods (ADR) should be complied within the premises.

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. 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. 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 1105
14.2 UN proper shipping name PENTANOLS
Hazardous ingredients Isoamyl alcohol
14.3 Transport hazard class(es)
Class 3 (flammable liquids)
14.4 Packing group III (substance presenting low 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 1105
  Proper shipping name PENTANOLS
  Particulars in the transport document UN1105, PENTANOLS, 3, III, (D/E)
  Class 3
  Classification code F1
  Packing group III
  Danger label(s) 3
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.
ISOAMYL ALCOHOL ROTIPURAN® ≥98,5 %, p.a., ACS

**Article number:** T870

  Not listed.
- **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>No</th>
<th>Dangerous substance/hazard categories</th>
<th>Qualifying quantity (tonnes) for the application of lower and upper-tier requirements</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>P5c</td>
<td>Flammable liquids (cat. 2, 3)</td>
<td>5.000</td>
<td>50.000</td>
</tr>
</tbody>
</table>

**Notation**

51) Flammable liquids, categories 2 or 3 not covered by PSa and PSb

- **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>Abbrev.</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>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>
<tr>
<td>WEL</td>
<td>workplace exposure limit</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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>flammable liquid and vapour</td>
</tr>
<tr>
<td>H332</td>
<td>harmful if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>may cause respiratory irritation</td>
</tr>
</tbody>
</table>

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