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

1.1 Product identifier

Identification of the substance: Methanol
Article number: HN41
Registration number (REACH): 01-211943307-44-xxxx
Index No: 603-001-00-X
EC number: 200-659-6
CAS number: 67-56-1

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

Identified uses:
- laboratory chemical
- laboratory and analytical use
- industrial use
- professional use
- Use in cleaning agents
- formulation [mixing] of preparations and/or re-packaging (excluding alloys)

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

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>3.10</td>
<td>acute toxicity (oral)</td>
<td>(Acute Tox. 3)</td>
<td>H301</td>
</tr>
</tbody>
</table>
### Classification acc. to GHS

<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>3.1D</td>
<td>acute toxicity (dermal)</td>
<td>(Acute Tox. 3)</td>
<td>H311</td>
</tr>
<tr>
<td>3.1I</td>
<td>acute toxicity (inhal.)</td>
<td>(Acute Tox. 3)</td>
<td>H331</td>
</tr>
<tr>
<td>3.8</td>
<td>specific target organ toxicity - single exposure</td>
<td>(STOT SE 1)</td>
<td>H370</td>
</tr>
</tbody>
</table>

### 2.2 Label elements

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

**Signal word**: Danger

**Pictograms**

- GHS02, GHS06, GHS08

**Hazard statements**

- H225: Highly flammable liquid and vapour
- H301+H311+H331: Toxic if swallowed, in contact with skin or if inhaled
- H370: Causes damage to organs (eye)

**Precautionary statements**

**Precautionary statements - prevention**

- P210: Keep away from heat, sparks, open flames, hot surfaces. No smoking.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves/eye protection.

**Precautionary statements - response**

- P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P308+P311: IF exposed or concerned: Call a POISON CENTER/doctor.

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

**Signal word**: Danger

**Symbol(s)**

- H301+H311+H331: Toxic if swallowed, in contact with skin or if inhaled.
- H370: Causes damage to organs (eye).
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves/eye protection.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P308+P311: IF exposed or concerned: Call a POISON CENTER/doctor.

### 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>Methanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index No</td>
<td>603-001-00-X</td>
</tr>
<tr>
<td>Registration number (REACH)</td>
<td>01-2119433307-44-xxxx</td>
</tr>
<tr>
<td>EC number</td>
<td>200-659-6</td>
</tr>
<tr>
<td>CAS number</td>
<td>67-56-1</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>CH₄O</td>
</tr>
<tr>
<td>Molar mass</td>
<td>32.04 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

**General notes**
Take off immediately all contaminated clothing. Self-protection of the first aider.

**Following inhalation**
Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

**Following skin contact**
After contact with skin, wash immediately with plenty of water.

**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 immediately and drink plenty of water. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

After eye contact: Conjunctival redness of the eyes, Conjunctivitis (pink eye),
Following skin contact: Has degreasing effect on the skin,
After ingestion: Abdominal pain, Malaise, Vomiting, Loss of righting reflex, and ataxia, Serious physical decay of vision, Risk of blindness, Poisoning effect on central nervous system can cause convulsions, laboured breathing and loss of consciousness, Headaches and dizziness may occur, proceeding to fainting or unconsciousness, Large doses may result in coma and death,
Following inhalation: Cough

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, alcohol resistant 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. Wear full chemical protective clothing.

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.

6.4 Reference to other sections
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation. Use extractor hood (laboratory). Handle and open container with care. Clear contaminated areas thoroughly.

• 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. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.

Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

Store locked up. 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.

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>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>EU</td>
<td>methanol</td>
<td>67-56-1</td>
<td>IOELV</td>
<td></td>
<td>200</td>
<td>260</td>
<td></td>
<td></td>
<td>2006/15/EC</td>
</tr>
<tr>
<td>MT</td>
<td>methanol</td>
<td>67-56-1</td>
<td>OELV</td>
<td></td>
<td>200</td>
<td>260</td>
<td></td>
<td></td>
<td>CAP. 424</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 (unless otherwise specified)
Relevant DNELs/DMELs/PNECs and other threshold levels

- **human health values**

<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>260 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - local effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>40 mg/kg</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>acute - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>260 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>260 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>40 mg/kg</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>260 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>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEC</td>
<td>20,8 mg/l</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>2,08 mg/l</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>100 mg/l</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>77 mg/kg</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>7,7 mg/kg</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>100 mg/kg</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

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

**Eye/face protection**

Use safety goggle with side protection.

**Skin protection**

- **hand protection**
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. 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**
  0,7mm
**Safety data sheet**
according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

**Methanol ROTISOLV® ≥ 99.98%, Ultra LC-MS**

article number: HN41

**• breakthrough times of the glove material**
>480 minutes (permeation: level 6)

**• 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).

**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>like: alcohol</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Other physical and chemical parameters**

<table>
<thead>
<tr>
<th>Parameter</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>-98 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>65 °C at 1.013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>9,7 °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**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>• lower explosion limit (LEL)</td>
<td>5,5 vol%</td>
</tr>
<tr>
<td>• upper explosion limit (UEL)</td>
<td>44 vol%</td>
</tr>
<tr>
<td>Explosion limits of dust clouds</td>
<td>not relevant</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>128 hPa at 20 °C</td>
</tr>
<tr>
<td></td>
<td>200 hPa at 30 °C</td>
</tr>
<tr>
<td>Density</td>
<td>0.79 g/cm³ at 20 °C</td>
</tr>
<tr>
<td>Vapour density</td>
<td>1.11 (air = 1)</td>
</tr>
<tr>
<td>Bulk density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available.</td>
</tr>
</tbody>
</table>
**Solubility(ies)**

**Water solubility**
miscible in any proportion

**Partition coefficient**

n-octanol/water (log KOW)
-0.77 (ECHA)

**Auto-ignition temperature**
455 °C at 1.013 hPa - ECHA

**Decomposition temperature**
no data available

**Viscosity**

• dynamic viscosity
0.6 mPa s at 20 °C

**Explosive properties**
Shall not be classified as explosive

**Oxidising properties**
none

**9.2 Other information**

Temperature class (EU, acc. to ATEX)
T1 (Maximum permissible surface temperature on the equipment: 450°C)

---

**SECTION 10: Stability and reactivity**

**10.1 Reactivity**
Risk of ignition. 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**
Violent reaction with: Alkaline earth metal, Nitric acid, Sulphuric acid, concentrated, Strong oxidiser, Hydrogen peroxide

**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**

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>inhalation: vapour</td>
<td>LC50</td>
<td>128 mg/l/4h</td>
<td>rat</td>
<td>ECHA</td>
</tr>
<tr>
<td>oral</td>
<td>LD50</td>
<td>5,628 mg/kg</td>
<td>rat</td>
<td>TOXNET</td>
</tr>
<tr>
<td>oral</td>
<td>LDLo</td>
<td>143 mg/kg</td>
<td>human</td>
<td>TOXNET</td>
</tr>
<tr>
<td>dermal</td>
<td>LD50</td>
<td>15,800 mg/kg</td>
<td>rabbit</td>
<td>TOXNET</td>
</tr>
</tbody>
</table>

Malta (en)
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
Causes damage to organs (eye).

• 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
abdominal pain, vomiting, loss of righting reflex, and ataxia, poisoning effect on central nervous system can cause convulsions, laboured breathing and loss of consciousness, risk of blindness, large doses may result in coma and death

• If in eyes
conjunctivitis (pink eye)

• If inhaled
cough

• If on skin
has degreasing effect on the skin

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>15.400 mg/l</td>
<td>bluegill (Lepomis macrochirus)</td>
<td>ECHA</td>
<td>96 h</td>
</tr>
<tr>
<td>EC50</td>
<td>12.700 mg/l</td>
<td>bluegill (Lepomis macrochirus)</td>
<td>ECHA</td>
<td>96 h</td>
</tr>
<tr>
<td>ErC50</td>
<td>22.000 mg/l</td>
<td>Pseudokirchneriella subcapitata</td>
<td>ECHA</td>
<td>96 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>LOEC</td>
<td>47.49 mg/l</td>
<td>fish</td>
<td>ECHA</td>
<td>90 d</td>
</tr>
<tr>
<td>NOEC</td>
<td>23.75 mg/l</td>
<td>fish</td>
<td>ECHA</td>
<td>90 d</td>
</tr>
</tbody>
</table>

12.2 Process of degradability

The substance is readily biodegradable.
Theoretical Oxygen Demand: 1.500 mg/g
Theoretical Carbon Dioxide: 1,374 mg/mg
Biochemical Oxygen Demand: 600 – 1.120 mg/g at 5 h

<table>
<thead>
<tr>
<th>Process</th>
<th>Degradation rate</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>biotic/abiotic</td>
<td>99 %</td>
<td>30 d</td>
</tr>
<tr>
<td>oxygen depletion</td>
<td>76 %</td>
<td>5 d</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.
n-octanol/water (log KOW) -0.77

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

Data are not available.

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.

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
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 1230
14.2 UN proper shipping name METHANOL
14.3 Transport hazard class(es)
   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 1230
  Proper shipping name METHANOL
  Particulars in the transport document UN1230, METHANOL, 3 (6.1), II, (D/E)
  Class 3
  Classification code FT1
  Packing group II
  Danger label(s) 3+6.1
  Special provisions (SP) 279, 802(ADN)
  Excepted quantities (EQ) E2
  Limited quantities (LQ) 1 L
  Transport category (TC) 2
Tunnel restriction code (TRC)  D/E
Hazard identification No  336

• International Maritime Dangerous Goods Code (IMDG)
  UN number  1230
  Proper shipping name  METHANOL
  Particulars in the shipper’s declaration  UN1230, METHANOL, 3 (6.1), II, 9,7°C c.c.
  Class  3
  Subsidiary risk(s)  6.1
  Marine pollutant  -
  Packing group  II
  Danger label(s)  3+6.1

  Special provisions (SP)  279
  Excepted quantities (EQ)  E2
  Limited quantities (LQ)  1 L
  EmS  F-E, S-D
  Stowage category  B

• International Civil Aviation Organization (ICAO-IATA/DGR)
  UN number  1230
  Proper shipping name  Methanol
  Particulars in the shipper’s declaration  UN1230, Methanol, 3 (6.1), II
  Class  3
  Subsidiary risk(s)  6.1
  Packing group  II
  Danger label(s)  3+6.1

  Special provisions (SP)  A113
  Excepted quantities (EQ)  E2
  Limited quantities (LQ)  1 L
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.
- Restrictions according to REACH, Annex XVII

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Wt%</th>
<th>Type of registration</th>
<th>Conditions of restriction</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>100</td>
<td>2018/0589/EC annex XVII</td>
<td>R69</td>
<td>69</td>
</tr>
<tr>
<td>Methanol</td>
<td>100</td>
<td>100</td>
<td>1907/2006/EC annex XVII</td>
<td>R3</td>
<td>3</td>
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<tr>
<td>Methanol</td>
<td>100</td>
<td>100</td>
<td>1907/2006/EC annex XVII</td>
<td>R40</td>
<td>40</td>
</tr>
</tbody>
</table>

Legend

R3

1. Shall not be used in:
   - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
   - tricks and jokes,
   - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
   - can be used as fuel in decorative oil lamps for supply to the general public, and,
   - present an aspiration hazard and are labelled with R65 or H304.
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
   (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage';
   (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage';
   (c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.
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Legend

R40 1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
   - metallic glitter intended mainly for decoration,
   - artificial snow and frost,
   - 'whoopie' cushions,
   - silly string aerosols,
   - imitation excrement,
   - horns for parties,
   - decorative flakes and foams,
   - artificial cobwebs,
   - stink bombs.

2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
   - 'For professional users only'.

3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).

4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

R69 Shall not be placed on the market to the general public after 9 May 2019 in windscreen washing or defrosting fluids, in a concentration equal to or greater than 0.6 % by weight.

• Restrictions according to REACH, Title VIII
None.

• List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list
not listed

• Seveso Directive

2012/18/EU (Seveso III)

<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>22</td>
<td>methanol</td>
<td>500</td>
<td>5,000</td>
</tr>
</tbody>
</table>

• Directive 75/324/EEC relating to aerosol dispensers

Filling batch


| VOC content | 100 %
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>790  g/l</td>
</tr>
</tbody>
</table>

Directive on industrial emissions (VOCs, 2010/75/EU)

<table>
<thead>
<tr>
<th>VOC content</th>
<th>100 %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>790  g/l</td>
</tr>
</tbody>
</table>

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

Regulation 98/2013/EU on the marketing and use of explosives precursors

not listed
Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors
not listed

National inventories
Substance is listed in the following national inventories:

<table>
<thead>
<tr>
<th>Country</th>
<th>National inventories</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AICS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CA</td>
<td>DSL</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CN</td>
<td>IECSC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>ECSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>REACH Reg.</td>
<td>substance is listed</td>
</tr>
<tr>
<td>JP</td>
<td>CSCL-ENCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>KR</td>
<td>KECI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>MX</td>
<td>INSQ</td>
<td>substance is listed</td>
</tr>
<tr>
<td>NZ</td>
<td>NZIoC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>PH</td>
<td>PICCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TR</td>
<td>CICR</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TW</td>
<td>TCSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>US</td>
<td>TSCA</td>
<td>substance is listed</td>
</tr>
</tbody>
</table>

Legend
AICS     Australian Inventory of Chemical Substances
CICR     Chemical Inventory and Control Regulation
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
DSL      Domestic Substances List (DSL)
ECSI     EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC    Inventory of Existing Chemical Substances Produced or Imported in China
INSQ     National Inventory of Chemical Substances
KECI     Korea Existing Chemicals Inventory
NZIoC    New Zealand Inventory of Chemicals
PICCS    Philippine Inventory of Chemicals and Chemical Substances
REACH Reg. REACH registered substances
TCSI     Taiwan Chemical Substance Inventory
TSCA     Toxic Substance Control Act

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out for this substance.

16.1 Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
<th>Safety-relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>Pictograms: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>
**Safety data sheet**  
according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

**Methanol ROTISOLV® ≥ 99.98%, Ultra LC-MS**

*article number: HN41*

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
<th>Safety-relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
<td></td>
<td>Occupational exposure limit values (Workplace Exposure Limits); change in the listing (table)</td>
<td>yes</td>
</tr>
</tbody>
</table>

### 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>CAP. 424</td>
<td>Occupational Health and Safety Authority Act (CAP. 424)</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>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</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>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</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>IOELV</td>
<td>indicative occupational exposure limit value</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>SVHC</td>
<td>Substance of Very High Concern</td>
</tr>
</tbody>
</table>
Safety data sheet
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<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<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)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

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>H301</td>
<td>toxic if swallowed</td>
</tr>
<tr>
<td>H311</td>
<td>toxic in contact with skin</td>
</tr>
<tr>
<td>H331</td>
<td>toxic if inhaled</td>
</tr>
<tr>
<td>H370</td>
<td>causes damage to organs (eye)</td>
</tr>
</tbody>
</table>

Disclaimer
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.