

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Methyl ethyl ketone (2-Butanone), 1 l**

Print date: 14.04.2015

Product code: 9991617

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Methyl ethyl ketone (2-Butanone), 1 l

CAS No: 78-93-3  
Index No: 606-002-00-3  
EC No: 201-159-0

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Laboratory chemicals

**1.3. Details of the supplier of the safety data sheet****Seller**

Company name: CONATEX-DIDACTIC Lehrmittel GmbH  
Street: Im Forstgarten 1  
Place: D-66459 Kirkel  
Internet: www.conatex.com

**Supplier**

Company name: Carbolution Chemicals GmbH  
Street: Im Stadtwald, Gebäude A1.2  
Place: D-66123 Saarbrücken  
Contact person: Dr. Michael Bauer Telephone: +49 (0)681 302-71232  
e-mail: michael.bauer@carbolution-chemicals.de  
Internet: www.carbolution-chemicals.de

**1.4. Emergency telephone number:** +49 (0)681 302-71232**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC**

Indications of danger: F - Highly flammable, Xi - Irritant  
R phrases:  
Highly flammable.  
Irritating to eyes.  
Repeated exposure may cause skin dryness or cracking.  
Vapours may cause drowsiness and dizziness.

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard categories:  
Flammable liquid: Flam. Liq. 2  
Serious eye damage/eye irritation: Eye Irrit. 2  
Specific target organ toxicity - single exposure: STOT SE 3  
Hazard Statements:  
Highly flammable liquid and vapour.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.

**2.2. Label elements****Hazardous components which must be listed on the label**

butanone; ethyl methyl ketone

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Signal word:

Danger

Pictograms:

GHS02-GHS07



#### Hazard statements

- H225 Highly flammable liquid and vapour.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

#### Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

#### Special labelling of certain mixtures

- EUH066 Repeated exposure may cause skin dryness or cracking.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

- Sum formula: C<sub>4</sub>H<sub>8</sub>O  
Molecular weight: 72,11

#### Hazardous components

| EC No        | Chemical name   | Quantity |
|--------------|---|----------|
| CAS No       | Classification according to Directive 67/548/EEC                |          |
| Index No     | Classification according to Regulation (EC) No. 1272/2008 [CLP] |          |
| 201-159-0    | butanone; ethyl methyl ketone                                   | 100 %    |
| 78-93-3      | F - Highly flammable, Xi - Irritant R11-36-66-67                |          |
| 606-002-00-3 | Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066    |          |

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### After inhalation

Provide fresh air. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### After contact with skin

Wash with plenty of water. Change contaminated clothing.

#### After contact with eyes

If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

#### After ingestion

Rinse mouth immediately and drink plenty of water.

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

No data available

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#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

###### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>). Foam. Extinguishing powder.

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

Combustible. Vapours may form explosive mixtures with air.

##### 5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

##### Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

#### SECTION 6: Accidental release measures

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

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment.

##### 6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Explosion hazard.

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

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

#### SECTION 7: Handling and storage

##### 7.1. Precautions for safe handling

###### Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

###### Advice on protection against fire and explosion

Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Vapours may form explosive mixtures with air.

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

###### Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from sources of ignition. - No smoking.

###### Advice on storage compatibility

Do not store together with: Material, rich in oxygen, oxidizing.

#### SECTION 8: Exposure controls/personal protection

##### 8.1. Control parameters

###### Exposure limits (EH40)

| CAS No  | Substance                         | ppm | mg/m <sup>3</sup> | fibres/ml | Category      | Origin |
|---------|-----------------------------------|-----|-------------------|-----------|---------------|--------|
| 78-93-3 | Butan-2-one (methyl ethyl ketone) | 200 | 600               |           | TWA (8 h)     | WEL    |
|         |                                   | 300 | 899               |           | STEL (15 min) | WEL    |

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#### Biological Monitoring Guidance Values (EH40)

| CAS No  | Substance   | Parameter   | Value     | Test material | Sampling time |
|---------|-------------|-------------|-----------|---------------|---------------|
| 78-93-3 | Butan-2-one | butan-2-one | 70 µmol/L | urine         | Post shift    |

#### 8.2. Exposure controls

##### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

##### Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream. After work, wash hands and face. When using do not eat or drink.

##### Eye/face protection

Eye protection: Tightly sealed safety glasses. German Industry Norms (DIN) / European Norms (EN): DIN EN 166

##### Hand protection

Hand protection: Single-use gloves. Before using check leak tightness / impermeability. Use gloves only once. German Industry Norms (DIN) / European Norms (EN): DIN EN 374

##### Skin protection

Body protection: Lab apron. Only wear fitting, comfortable and clean protective clothing.

##### Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Suitable respiratory protective equipment: particulates filter device (DIN EN 143).

## SECTION 9: Physical and chemical properties

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

|                 |                   |
|-----------------|-------------------|
| Physical state: | liquid            |
| Colour:         | colourless        |
| Odour:          | No data available |

#### Test method

pH-Value: No data available

#### Changes in the physical state

|  |                   |
|--|-------------------|
| Melting point:                           | -87 °C            |
| Initial boiling point and boiling range: | 80 °C             |
| Sublimation point:                       | No data available |
| Softening point:                         | No data available |
| Flash point:                             | -3 °C             |

#### Flammability

|                         |                   |
|-------------------------|-------------------|
| Solid:                  | No data available |
| Gas:                    | No data available |
| Lower explosion limits: | 1,8 vol. %        |
| Upper explosion limits: | 10,1 vol. %       |
| Ignition temperature:   | No data available |

#### Auto-ignition temperature

|        |                   |
|--------|-------------------|
| Solid: | No data available |
| Gas:   | No data available |

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|                                |                   |
|--------------------------------|-------------------|
| Vapour pressure:<br>(at 20 °C) | 95 hPa            |
| Vapour pressure:               | No data available |
| Density:                       | No data available |
| Water solubility:              | No data available |
| Partition coefficient:         | 0,29              |
| Viscosity / dynamic:           | No data available |
| Viscosity / kinematic:         | No data available |
| Flow time:                     | No data available |
| Vapour density:                | 2,49              |
| Evaporation rate:              | No data available |
| Solvent separation test:       | No data available |
| Solvent content:               | No data available |

**9.2. Other information**

Solid content: No data available

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No data available

**10.3. Possibility of hazardous reactions**

No data available

**10.4. Conditions to avoid**

Keep away from heat. Ignition hazard.

**10.5. Incompatible materials**

Oxidizing agents, strong.

**10.6. Hazardous decomposition products**

No data available

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

Toxicological data are not available.

**Acute toxicity**

Toxicological data are not available.

**Irritation and corrosivity**

Irritating to eyes. Vapours may cause drowsiness and dizziness.

**Sensitising effects**

No data available

**Severe effects after repeated or prolonged exposure**

Has degreasing effect on the skin. Frequently or prolonged contact with skin may cause dermal irritation.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Due to missing data no statement can be made whether the substance fulfills the criteria of CMR categories 1 or 2. Practical experiences do not give any evidence for CMR activity of categories 1 or 2.

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**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

**Practical experience****Observations relevant to classification**

No data available

**SECTION 12: Ecological information****12.1. Toxicity**

No data available

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No data available

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

No data available

**12.6. Other adverse effects**

No data available

**Further information**

Do not allow to enter into surface water or drains. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Advice on disposal**

Dispose of waste according to applicable legislation.

**Waste disposal number of waste from residues/unused products**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals  
Classified as hazardous waste.

**Waste disposal number of used product**

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals  
Classified as hazardous waste.

**Waste disposal number of contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances  
Classified as hazardous waste.

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

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#### SECTION 14: Transport information

##### Land transport (ADR/RID)

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | UN1193                                   |
| <b>14.2. UN proper shipping name:</b>    | ETHYL METHYL KETONE (METHYL ETHYLKETONE) |
| <b>14.3. Transport hazard class(es):</b> | 3  |
| <b>14.4. Packing group:</b>              | II                                       |
| Hazard label:                            | 3  |
| Classification code:                     | F1                                       |
| Limited quantity:                        | 1 L                                      |
| Transport category:                      | 2  |
| Hazard No:                               | 33                                       |
| Tunnel restriction code:                 | D/E                                      |

##### Other applicable information (land transport)

E2

##### Inland waterways transport (ADN)

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | UN1193                                   |
| <b>14.2. UN proper shipping name:</b>    | ETHYL METHYL KETONE (METHYL ETHYLKETONE) |
| <b>14.3. Transport hazard class(es):</b> | 3  |
| <b>14.4. Packing group:</b>              | II                                       |
| Hazard label:                            | 3  |
| Classification code:                     | F1                                       |
| Limited quantity:                        | 1 L                                      |

##### Other applicable information (inland waterways transport)

E2

##### Marine transport (IMDG)

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | UN1193                                   |
| <b>14.2. UN proper shipping name:</b>    | ETHYL METHYL KETONE (METHYL ETHYLKETONE) |
| <b>14.3. Transport hazard class(es):</b> | 3  |
| <b>14.4. Packing group:</b>              | II                                       |
| Hazard label:                            | 3  |
| Special Provisions:                      | -  |
| Limited quantity:                        | 1 L                                      |
| EmS:                                     | F-E, S-D                                 |

##### Other applicable information (marine transport)

E2

##### Air transport (ICAO)

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | UN1193                                   |
| <b>14.2. UN proper shipping name:</b>    | ETHYL METHYL KETONE (METHYL ETHYLKETONE) |
| <b>14.3. Transport hazard class(es):</b> | 3  |
| <b>14.4. Packing group:</b>              | II                                       |
| Hazard label:                            | 3  |
| Limited quantity Passenger:              | 1 L                                      |
| IATA-packing instructions - Passenger:   | 353                                      |
| IATA-max. quantity - Passenger:          | 5 L                                      |
| IATA-packing instructions - Cargo:       | 364                                      |

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IATA-max. quantity - Cargo:

60 L

**Other applicable information (air transport)**

E2

: Y341

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information****Additional information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

**National regulatory information**

Water contaminating class (D): 3 - highly water contaminating

**SECTION 16: Other information****Relevant R-phrases (Number and full text)**

- |    |   |
|----|---|
| 11 | Highly flammable.                                     |
| 36 | Irritating to eyes.                                   |
| 66 | Repeated exposure may cause skin dryness or cracking. |
| 67 | Vapours may cause drowsiness and dizziness.           |

**Relevant H- and EUH-phrases (Number and full text)**

- |        |   |
|--------|---|
| H225   | Highly flammable liquid and vapour.                   |
| H319   | Causes serious eye irritation.                        |
| H336   | May cause drowsiness or dizziness.                    |
| EUH066 | Repeated exposure may cause skin dryness or cracking. |