

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 23.11.2015

Version number 2

Revision: 23.11.2015

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

- **1.1 Product identifier**
- **Trade name:** **KEMPERTEC MEK**
- **CAS Number:** 78-93-3
- **EC number:** 201-159-0
- **Index number:** 606-002-00-3
- **Registration number:** 01-2119457290-43
- **1.2 Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the mixture** Cleaning material/ Detergent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** KEMPER SYSTEM GmbH & Co. KG  
Holländische Strasse 32-36  
34246 Vellmar  
Deutschland / Germany  
Telefon: +49 (0)561 / 8295-0  
Telefax: +49 (0)561 / 8295-5110  
E-Mail: MSDS@KEMPER-SYSTEM.COM
- **Further information obtainable from:** Research and Development
- **1.4 Emergency telephone number:** Gif tinformationszentrum der Länder Rheinland-Pfalz und Hessen  
Langenbeckstraße 1; Gebäude 601; 55131 Mainz  
Tel. Nr.: +49 (0)6131 / 19 24 0  
Universitätsmedizin der Johannes Gutenberg-Universität Mainz

## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms**

The substance is classified and labelled according to the CLP regulation.



GHS02

GHS07

- **Signal word**
- **Hazard-determining components of labelling:**
- **Hazard statements**

Danger

- **Precautionary statements**

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

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

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:**

EUH066 Repeated exposure may cause skin dryness or cracking.

Not applicable.

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- vPvB: Not applicable.

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## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**  
 - **CAS No. Description** 78-93-3 butanone  
 - **Identification number(s)**  
 - **EC number:** 201-159-0  
 - **Index number:** 606-002-00-3

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**  
 - **General information:** Immediately remove any clothing soiled by the product.  
 - **After inhalation:** In case of unconsciousness place patient stably in side position for transportation. Supply fresh air; consult doctor in case of complaints.  
 - **After skin contact:** Immediately wash with water and soap and rinse thoroughly.  
 - **After eye contact:** Rinse opened eye for several minutes under running water. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
 - **After swallowing:** If symptoms persist consult doctor.  
 - **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.  
 - **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**  
 - **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water. Alcohol resistant foam ABC powder  
 - **For safety reasons unsuitable extinguishing agents:** Water with full jet  
 - **5.2 Special hazards arising from the substance or mixture** No further relevant information available.  
 - **5.3 Advice for firefighters**  
 - **Protective equipment:** Do not inhale explosion gases or combustion gases.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away. Keep away from ignition sources.  
 - **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water. Prevent from spreading (e.g. by damming-in or oil barriers).  
 - **6.3 Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents  
 - **6.4 Reference to other sections** See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Store in cool, dry place in tightly closed receptacles. Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols. Use only in well ventilated areas.  
 - **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke. Protect against electrostatic charges.  
 - **7.2 Conditions for safe storage, including any incompatibilities**  
 - **Storage:**  
 - **Requirements to be met by storerooms and receptacles:** Store in a cool location.

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- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Protect from frost.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Storage class:** 3
- **7.3 Specific end use(s):** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

### - Ingredients with limit values that require monitoring at the workplace:

#### 78-93-3 butanone

WEL	Short-term value: 899 mg/m <sup>3</sup> , 300 ppm
	Long-term value: 600 mg/m <sup>3</sup> , 200 ppm Sk, BMGV

### - Ingredients with biological limit values:

#### 78-93-3 butanone

BMGV	70 µmol/L
	Medium: urine
	Sampling time: post shift Parameter: butan-2-one

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.  
Filter A/P2
- **Protection of hands:**



Protective gloves

Only use chemical-protective gloves with CE-labelling of category III.  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves** The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.  
Recommended thickness of the material: ≥ 0.4 mm  
Synthetic rubber gloves
- **Penetration time of glove material** The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.  
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.  
Value for the permeation: Level ≥ 2

- **As protection from splashes gloves made of the following materials are suitable:** Nitrile rubber, NBR
- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing  
Impervious protective clothing

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## SECTION 9: Physical and chemical properties

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

#### - General Information

#### - Appearance:

Form:	Fluid
Colour:	Colourless
- Odour:	Pleasant
- Odour threshold:	Not determined.

- pH-value: Not determined.

#### - Change in condition

Melting point/Melting range:	-86,3 °C
Boiling point/Boiling range:	79-80,5 °C

- Flash point: -4 °C

- Flammability (solid, gaseous): Not applicable.

- Ignition temperature: 514 °C

- Decomposition temperature: Not determined.

- Self-igniting: Not determined.

- Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

#### - Explosion limits:

Lower:	1,8 Vol %
Upper:	11,5 Vol %

- Density at 20 °C: 0.81 g/cm<sup>3</sup>

- Relative density: Not determined.

- Vapour density: Not determined.

- Evaporation rate: Not determined.

#### - Solubility in / Miscibility with

water at 20 °C: 290 g/l

- Partition coefficient (n-octanol/water): Not determined.

#### - Viscosity:

Dynamic at 15 °C:	0,423 mPas
Kinematic:	Not determined.

#### - Solvent content:

VOC (EC) 100.00 %

- 9.2 Other information: No further relevant information available.

## SECTION 10: Stability and reactivity

### - 10.1 Reactivity

No further relevant information available.

### - 10.2 Chemical stability

#### - Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

### - 10.3 Possibility of hazardous reactions

No dangerous reactions known.

### - 10.4 Conditions to avoid

No further relevant information available.

### - 10.5 Incompatible materials:

No further relevant information available.

### - 10.6 Hazardous decomposition products:

No dangerous decomposition products known.

## SECTION 11: Toxicological information

### - 11.1 Information on toxicological effects

#### - Acute toxicity

Based on available data, the classification criteria are not met.

#### - LD/LC50 values relevant for classification:

##### 78-93-3 butanone

Oral	LD50	3300 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rabbit)
Inhalative	LC50/4 h	40 mg/l (mouse)
		34.5 mg/l (rat)

#### - Primary irritant effect:

#### - Skin corrosion/irritation

Based on available data, the classification criteria are not met.

#### - Serious eye damage/irritation

Causes serious eye irritation.

#### - Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

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- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**
- 78-93-3 butanone**
- LC50/96 h | >3000 mg/l (fish)
- EC50/48 h | 1382 mg/l (daphnia)
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**
- 07 02 04\* | other organic solvents, washing liquids and mother liquors
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1193
- **14.2 UN proper shipping name**
- **ADR** 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- **IMDG** ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- **IATA** Ethyl methyl ketone
- **14.3 Transport hazard class(es)**
- **ADR**
- 
- **Class** 3 (F1) Flammable liquids.
- **Label** 3
- **IMDG, IATA**
- 
- **Class** 3 Flammable liquids.
- **Label** 3
- **14.4 Packing group**
- **ADR, IMDG, IATA** II

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<ul style="list-style-type: none"> <li>- 14.5 Environmental hazards:</li> <li>- Marine pollutant:</li> </ul>	<p>No</p>
<ul style="list-style-type: none"> <li>- 14.6 Special precautions for user</li> <li>- Danger code (Kemler):</li> <li>- EMS Number:</li> <li>- Stowage Category</li> </ul>	<p>Warning: Flammable liquids. 33 F-E,S-D B</p>
<ul style="list-style-type: none"> <li>- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</li> </ul>	<p>Not applicable.</p>
<ul style="list-style-type: none"> <li>- Transport/Additional information:</li> <li>- ADR</li> <li>- Limited quantities (LQ)</li> <li>- Excepted quantities (EQ)</li> </ul>	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> <li>- Transport category</li> <li>- Tunnel restriction code</li> </ul>	<p>2 D/E</p>
<ul style="list-style-type: none"> <li>- IMDG</li> <li>- Limited quantities (LQ)</li> <li>- Excepted quantities (EQ)</li> </ul>	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> <li>- UN "Model Regulation":</li> </ul>	<p>UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II</p>

## SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I      Substance is not listed.
- Seveso category      P5c FLAMMABLE LIQUIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements      5,000 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements      50,000 t
- 15.2 Chemical safety assessment:      A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing MSDS:      research & development
- Contact:      research & development
- Abbreviations and acronyms:
  - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  - IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
  - ICAO: International Civil Aviation Organisation
  - ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  - STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

- \* Data compared to the previous version altered.