

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 15.12.2016



Version number 3

Revision: 15.12.2016

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

- 1.1 Product identifier
- Trade name: **KEMCO 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
- Application of the substance / the mixture: Identified use: intended for professional use only!
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
Flam. Liq. 2 H225 Highly flammable liquid and vapour.
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: Danger
- Hazard-determining components of labelling: butanone
- 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.
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: EUH066 Repeated exposure may cause skin dryness or cracking.
- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

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

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Do not leave affected persons unattended.
Personal protection for the First Aider.
Take affected persons out of danger area and lay down.
- **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. If symptoms persist, consult a doctor. Protect unharmed eye.
- **After swallowing:** Rinse out mouth and then drink plenty of water. If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** Headache
Dizziness
Dizziness
Nausea
- **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:** CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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.
Ensure adequate ventilation
- **6.2 Environmental precautions:** Avoid contact with skin and eyes
Prevent from spreading (e.g. by damming-in or oil barriers).
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the material collected according to regulations.
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.
Keep receptacles tightly sealed.
Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.
Use explosion-proof apparatus / fittings and spark-proof tools.

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- 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.
 - Prevent any seepage into the ground.
 - Store only in the original receptacle.
- **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.
 - Store receptacle in a well ventilated area.
 - Protect from heat and direct sunlight.
 - Recommended storage temperature: 10-30 °C
 - Store in dry conditions.
- **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 ³ , 300 ppm
	Long-term value: 600 mg/m ³ , 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.
 - The usual precautionary measures are to be adhered to when handling chemicals.
 - Immediately remove all soiled and contaminated clothing
 - Wash hands before breaks and at the end of work.
 - Avoid contact with the eyes and skin.
 - Do not eat or drink while working.
 - Use skin protection cream for skin protection.
- **Respiratory protection:**
 - Use suitable respiratory protective device in case of insufficient ventilation.
 - Filter A/P2
- **Protection of hands:**
 - Only use chemical-protective gloves with CE-labelling of category III.
 - Check protective gloves prior to each use for their proper condition.
 - After use of gloves apply skin-cleaning agents and skin cosmetics.
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

- **Material of gloves**
 - Recommended materials:
 - Butyl rubber, BR
 - Recommended thickness of the material: ≥ 0.5 mm
 - 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.
- **Penetration time of glove material**
 - 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.
- **Eye protection:**



Tightly sealed goggles

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- **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 °C
Boiling point/Boiling range: 80 °C

- **Flash point:** -9 °C

- **Flammability (solid, gaseous):** Not applicable.

- Ignition temperature:

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: 1.5 Vol %
Upper: 11.5 Vol %

- **Density at 20 °C:** 0.81 g/cm³

- **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 20 °C: 0.40 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	2193 mg/kg (rat) (OECD 423)
Dermal	LD50	> 5000 mg/kg (rabbit) (OECD 402)
Inhalative	LC50/4 h	34 mg/l (rat)

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- **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.
- **CMR effects (carcinogenicity, 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	2990 mg/l (Pimephales promelas) (96h; OECD 203)
EC50	1972 mg/l (Pseudokirchneriella subcapitata) (72h; OECD 201)
EC50	308 mg/l (Daphnia magna) (48h; OECD 202)
EC0	1150 mg/l (Pseudomonas putida) (16h; DIN 38412)

- **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:** Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
- **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. Must be specially treated adhering to official regulations.
- **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, IATA** ETHYL METHYL KETONE (METHYL ETHYL KETONE)
- **14.3 Transport hazard class(es)**
- **ADR**
- 
- **Class** 3 (F1) Flammable liquids.

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- Label	3
- IMDG, IATA	
	
- Class	3 Flammable liquids.
- Label	3
- 14.4 Packing group	
- ADR, IMDG, IATA	II
- 14.5 Environmental hazards:	
- Marine pollutant:	No
- 14.6 Special precautions for user	Warning: Flammable liquids.
- Danger code (Kemler):	33
- EMS Number:	F-E,S-D
- Stowage Category	B
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
- Transport/Additional information:	
- ADR	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
- Transport category	2
- Tunnel restriction code	D/E
- IMDG	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
- UN "Model Regulation":	UN 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II

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
 - Seveso category
 - Qualifying quantity (tonnes) for the application of lower-tier requirements
 - Qualifying quantity (tonnes) for the application of upper-tier requirements
 - REGULATION (EC) No 1907/2006 ANNEX XVII
 - 15.2 Chemical safety assessment:
- Substance is not listed.
P5c FLAMMABLE LIQUIDS
- 5,000 t
- 50,000 t
- Conditions of restriction: 3
- A Chemical Safety Assessment has 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 SDS: 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

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- Sources

PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Internet:

- www.echa.com
- www.baua.de
- www.gestis.itrust.de (IFA: Institute für Occupational Safety and Health of the German Social Accident Insurance)

- * Data compared to the previous version altered.

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Annex: Exposure scenario

<ul style="list-style-type: none"> - Description of the activities / processes covered in the Exposure Scenario - Conditions of use - Duration and frequency - Physical parameters - Physical state - Concentration of the substance in the mixture - Other operational conditions - Other operational conditions affecting environmental exposure - Other operational conditions affecting worker exposure - Other operational conditions affecting consumer exposure - Other operational conditions affecting consumer exposure during the use of the product - Risk management measures - Worker protection - Organisational protective measures - Technical protective measures - Personal protective measures - Measures for consumer protection - Environmental protection measures - Water - Disposal measures - Disposal procedures - Waste type - Exposure estimation - Consumer 	<p>See section 1 of the annex to the Safety Data Sheet.</p> <p>5 workdays/week.</p> <p>Fluid</p> <p>Raw material.</p> <p>No special measures required.</p> <p>Avoid contact with eyes. Take precautionary measures against static discharge. Keep away from sources of ignition - No smoking.</p> <p>Keep out of the reach of children.</p> <p>Not applicable.</p> <p>No special measures required. Provide explosion-proof electrical equipment. Ensure that suitable extractors are available on processing machines Do not inhale gases / fumes / aerosols. Avoid contact with the eyes. Tightly sealed goggles Only use chemical-protective gloves with CE-labelling of category III. Check protective gloves prior to each use for their proper condition. After use of gloves apply skin-cleaning agents and skin cosmetics. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation Protective gloves Ensure adequate labelling. Keep locked up and out of the reach of children.</p> <p>No special measures required. Disposal must be made according to official regulations. Ensure that waste is collected and contained. Must not be disposed together with household garbage. Do not allow product to reach sewage system. Partially emptied and uncleaned packaging</p> <p>Not relevant for this Exposure Scenario.</p>
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