

**Safety data sheet**  
**1907/2006/EC, EU Nr. 453/2010**

Printing date 04.12.2014

Version number 5

Revision: 14.10.2014

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

· **1.1 Product identifier**

- Trade name: **Methyl Ethyl Ketone**
- Productname (REACH)

-

butanone

- 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**

· **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

· **Process category**

PROC1 Use in closed process, no likelihood of exposure

PROC2 Use in closed, continuous process with occasional controlled exposure

PROC3 Use in closed batch process (synthesis or formulation)

PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation

PROC15 Use as laboratory reagent

PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

· **Application of the substance / the mixture**

Industrial

Printing inks

Solvents

-

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Caldic UK

Stainsby Close, Holmewood I. E.

Chesterfield, Derbyshire S42 5UG, UK

Tel. +44 1246 854111

· **Further information obtainable from:**

qhse@caldic.be

reach@caldic.com

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- **1.4 Emergency telephone number:**  
+32(0)14 584 545 - Brandweer informatiecentrum gevaarlijke stoffen (BIG)  
0870 243 2241 or +44 (0)20 7771 5310 - United Kingdom Poisons Information Centre  
+353 1 8379964 - Ireland Poisons Information Centre
- **Additional Info** See section 16 for your Emergency Number

## 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.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Xi; Irritant  
R36: Irritating to eyes.  
F; Highly flammable  
R11: Highly flammable.  
R66-67: Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.
- **Information concerning particular hazards for human and environment:**  
At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.  
Has a narcotising effect.

### 2.2 Label elements

- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02 GHS07

- **Signal word** Danger
- **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/sparks/open flames/hot surfaces. - No smoking.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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· **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)** Not applicable.

· **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.

Take affected persons out into the fresh air.

Take affected persons out of danger area and lay down.

· **After inhalation:**

Supply fresh air; consult doctor in case of complaints.

Take affected persons into fresh air and keep quiet.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

Do not induce vomiting; call for medical help immediately.

A person vomiting while laying on their back should be turned onto their side.

· **4.2 Most important symptoms and effects, both acute and delayed**

Headache

Disziness

Nausea

Unconsciousness

· **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>

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*Fire-extinguishing powder*

*Alcohol resistant foam*

*Water haze*

· **For safety reasons unsuitable extinguishing agents:** *Water spray*

· **5.2 Special hazards arising from the substance or mixture**

*Formation of toxic gases is possible during heating or in case of fire.*

*Carbon monoxide (CO)*

*CO<sub>2</sub>*

· **5.3 Advice for firefighters**

· **Protective equipment:**

*Wear self-contained respiratory protective device.*

*Do not inhale explosion gases or combustion gases.*

· **Additional information**

*Cool endangered receptacles with water spray.*

*Collect contaminated fire fighting water separately. It must not enter the sewage system.*

## **SECTION 6: Accidental release measures**

· **6.1 Personal precautions, protective equipment and emergency procedures**

*Keep away from ignition sources.*

*Wear protective equipment. Keep unprotected persons away.*

*Use respiratory protective device against the effects of fumes/dust/aerosol.*

*Ensure adequate ventilation*

· **6.2 Environmental precautions:**

*Do not allow to enter sewers/ surface or ground water.*

*Do not allow to penetrate the ground/soil.*

· **6.3 Methods and material for containment and cleaning up:**

*Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).*

*Send for recovery or disposal in suitable receptacles.*

*Ensure adequate ventilation.*

· **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**

*Ensure good ventilation/exhaustion at the workplace.*

*Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).*

*Pneumatic conveyance only with nitrogen.*

*Prevent formation of aerosols.*

· **Information about fire - and explosion protection:**

*Keep ignition sources away - Do not smoke.*

*Fumes can combine with air to form an explosive mixture.*

*Protect against electrostatic charges.*

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Do not spray onto a naked flame or any incandescent material.

**· 7.2 Conditions for safe storage, including any incompatibilities**

**· Storage:**

**· Requirements to be met by storerooms and receptacles:**

Provide solvent resistant, sealed floor.

Use only receptacles specifically permitted for this substance/product.

**· Information about storage in one common storage facility: Store away from oxidising agents.**

**· Further information about storage conditions:**

Store in cool, dry conditions in well sealed receptacles.

Store receptacle in fume cupboard.

Protect from heat and direct sunlight.

**· Storage class: VCI: 3**

**· 7.3 Specific end use(s) See §1.2**

**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

**· DNELs**

Oral	DNEL Long-term - Systemic (consumer)	31 mg/kg bw/day (f)
Dermal	DNEL Long-term - Systemic (consumer)	412 mg/kg bw/day (f)
	DNEL Long-term - Systemic (worker)	1161 mg/kg bw/day (f)
Inhalative	DNEL Long-term - Systemic (consumer)	106 mg/m <sup>3</sup> (f)
	DNEL Long-term - Systemic (worker)	600 mg/m <sup>3</sup> (f)

**· PNECs**

PNEC Fresh water	55.8 mg/l (f)
PNEC Fresh water sediment	284.7 mg/kg (f)
PNEC Intermittent releases	55.8 mg/l (f)
PNEC Marine sediment	284.7 mg/kg (f)
PNEC Marine water	55.8 mg/l (f)
PNEC STP	709 mg/l (f)
PNEC Soil	22.5 mg/kg (f)

**· Additional information: The lists valid during the making were used as basis.**

**· 8.2 Exposure controls**

**· Personal protective equipment:**

**· General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

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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.  
Avoid contact with the eyes and skin.

· **Respiratory protection:**

EN 141

Filter A2B2E2K1P2

Use suitable respiratory protective device only when aerosol or mist is formed.

Filter A/P2

· **Protection of hands:**



Protective gloves

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**

EN374

Butyl rubber, BR

Recommended thickness of the material:  $\geq 0.5$  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**

For the mixture of chemicals mentioned below the penetration time has to be at least  $\geq 60$  minutes (Permeation according to EN 374 Part 3: Level 6).

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

EN 166



Tightly sealed goggles

· **Body protection: Protective work clothing**

**SECTION 9: Physical and chemical properties**

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Fluid

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<b>Colour:</b>	Colourless
<b>· Odour:</b>	Characteristic
<b>· pH-value:</b>	Not determined.
<b>· Change in condition</b>	
<b>Melting point/Melting range:</b>	-86 °C
<b>Boiling point/Boiling range:</b>	79-81 °C
<b>· Flash point:</b>	-6 °C
<b>· Auto-ignition temperature:</b>	404 °C
<b>· Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
<b>· Explosion limits:</b>	
<b>Lower:</b>	1 Vol %
<b>Upper:</b>	11 Vol %
<b>· Vapour pressure at 20 °C:</b>	105 hPa
<b>· Density at 20 °C:</b>	0.805-0.807 g/cm <sup>3</sup>
<b>· Vapour density at 20 °C</b>	3.11
<b>· Solubility in / Miscibility with water at 20 °C:</b>	270 g/l
<b>· Partition coefficient (n-octanol/water):</b>	0.29 log POW
<b>· Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>· 9.2 Other information</b>	No further relevant information available.

**SECTION 10: Stability and reactivity**

**· 10.1 Reactivity**

**· 10.2 Chemical stability**

**· Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

To avoid thermal decomposition do not overheat.

**· 10.3 Possibility of hazardous reactions** Reacts with strong oxidising agents.

**· 10.4 Conditions to avoid** No further relevant information available.

**· 10.5 Incompatible materials:** Oxidizing agents

**· 10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

GB

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**SECTION 11: Toxicological information**

· **11.1 Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rabbit)

· **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitisation:** No sensitising effects known.

**SECTION 12: Ecological information**

· **12.1 Toxicity**

· **Aquatic toxicity:**

EC 50 (48 u)	>100 mg/l (daphnia magna)
LC 50 (48 u)	>100 mg/l (Leuciscus idus)

· **12.2 Persistence and degradability** No further relevant information available.

· **Other information:** The product is biodegradable.

· **12.3 Bioaccumulative potential** Not worth-mentioning accumulating in organisms

· **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

· **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.

· **Uncleaned packaging:**

· **Recommendation:** Packagings that may not be cleansed are to be disposed of in the same manner as the product.

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**SECTION 14: Transport information**

<ul style="list-style-type: none"> <li>· 14.1 UN-Number</li> <li>· ADR, IMDG, IATA</li> </ul>	<p>UN1193</p>	
<ul style="list-style-type: none"> <li>· 14.2 UN proper shipping name</li> <li>· ADR/RID</li> <li>· IMDG, IATA</li> </ul>	<p>1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE) ETHYL METHYL KETONE (METHYL ETHYL KETONE)</p>	
<ul style="list-style-type: none"> <li>· 14.3 Transport hazard class(es)</li> <li>· ADR, IMDG, IATA</li> </ul>	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>3 Flammable liquids. 3</p>
<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	<p>II</p>	
<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> </ul>	<p>Warning: Flammable liquids. 33 F-E,S-D</p>	
<ul style="list-style-type: none"> <li>· 14.7 Transport in bulk according to Annex II of MARPOL73/78 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> <li>· Transport category</li> <li>· Tunnel restriction code</li> <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 2 D/E 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>UN1193, 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
- Labelling according to Regulation (EC) No 1272/2008 GHS label elements

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· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
III	100.0

· **Waterhazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

" The information provided in these documents is based on our present state of knowledge of the product and is given in good faith and to the best of our experience. However, it should not be construed as a technical specification or as guaranteeing specific properties. In no event we will be responsible for damages or effects of any nature whatsoever, either express or implied, resulting from the use of this information. It is the own responsibility of the consignee and the user of the product to comply with all prevailing and applicable laws, regulations and directives. They should also make their own determination as to the suitability of the product for a particular use or application."

· **Emergency Numbers**

European Emergency Number: 112

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BULGARIA +359 2 9154 409

CZECH REPUBLIC +42 2 2491 9293 or +42 2 2491 5402

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**· 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)*

*ICAO: International Civil Aviation Organisation*

*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)*

*DNEL: Derived No-Effect Level (REACH)*

*PNEC: Predicted No-Effect Concentration (REACH)*

*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.**