

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

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 preparation**

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

· **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

(Contd. on page 2)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 1)

· **Additional Info** See section 16 for your Emergency Number

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 narcotizing 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.

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

· Additional information:

EUH066 Repeated exposure may cause skin dryness or cracking.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.

(Contd. on page 3)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

· **vPvB:** Not applicable.

(Contd. of page 2)

3 Composition/information on ingredients

- **3.1 Chemical characterization: Substances**
- **CAS No. Description**
78-93-3 butanone
- **Identification number(s)** Not applicable.
- **EC number:** 201-159-0
- **Index number:** 606-002-00-3

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
Dizziness
Nausea
Unconsciousness
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂
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)
CO₂
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.

(Contd. on page 4)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 3)

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.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Keep away from ignition sources.

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: 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).

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.

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.

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 oxidizing agents.

Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Storage class: VCI: 3

7.3 Specific end use(s) See §1.2

8 Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

(Contd. on page 5)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 4)

· **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
--------	---

· **DNELs**

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

· **PNECs**

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

· **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.
 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:**

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: ≥ 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.

(Contd. on page 6)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 5)

· **Penetration time of glove material**

For the mixture of chemicals mentioned below the penetration time has to be at least ≥ 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**

9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid
Colour: Colourless

· **Odour:** Characteristic

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -86 °C
Boiling point/Boiling range: 79.6 °C

· **Flash point:** -6 °C

· **Auto-ignition temperature:** 404 °C

· **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 %

· **Vapour pressure at 20 °C:** 105 hPa

· **Density at 20 °C:** 0.8054 g/cm³

· **Vapour density at 20 °C:** 3.11

· **Solubility in / Miscibility with water at 20 °C:** 270 g/l

· **Partition coefficient (n-octanol/water):** 0.29 log POW

· **Viscosity:**

Dynamic: Not determined.
Kinematic: Not determined.

· **9.2 Other information** No further relevant information available.

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 6)

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 oxidizing 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*

11 Toxicological information

- **11.1 Information on toxicological effects**
 - **Acute toxicity:**
- | | | |
|--|------|----------------------|
| · LD/LC50 values relevant for classification: | | |
| Oral | LD50 | >2193 mg/kg (rat) |
| Dermal | LD50 | >5000 mg/kg (rabbit) |
- **Primary irritant effect:**
 - **on the skin:** *Irritant to skin and mucous membranes.*
 - **on the eye:** *Irritating effect.*
 - **Sensitization:** *No sensitizing effects known.*

12 Ecological information

- **12.1 Toxicity**
- | | |
|----------------------------|----------------------------------|
| · Aquatic toxicity: | |
| LC 50 | >5000 mg/l (rat) |
| LC 50 (24u) | > 5000 mg/l (fish) |
| | 2300 mg/l (daphnia) |
| LC/EC/IC 50 | >100 mg/l (fish) |
| | >100 mg/l (algae) |
| | 50 - 100 mg/l (Bacteria) |
| | >100 mg/l (TISBE Marine copepod) |
- **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.*

(Contd. on page 8)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone


(Contd. of page 7)

- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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.

14 Transport information

· 14.1 UN-Number · ADR, IMDG, IATA	UN1193
· 14.2 UN proper shipping name · ADR · IMDG, IATA	1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE) ETHYL METHYL KETONE (METHYL ETHYL KETONE)
· 14.3 Transport hazard class(es) · ADR, IMDG, IATA	
	
· Class · Label	3 Flammable liquids. 3
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user · Danger code (Kemler): · EMS Number:	Warning: Flammable liquids. 33 F-E,S-D
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code	1L 2 D/E

(Contd. on page 9)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 8)

· **UN "Model Regulation":** UN1193, ETHYL METHYL KETONE (METHYL ETHYL KETONE), 3, II

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**

· **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.

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

AUSTRIA +43 1 40 400 2222

BELGIUM/LUXEMBOURG +32 70 245 245

BULGARIA +359 2 9154 409

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

DENMARK +45 82 12 12 12

ESTONIA 16662 (24/5 9h00 monday till 9h00 Saturday)

FINLAND +358 9 471 977

FRANCE +33 1 40 05 48 48

GERMANY +49 30 450 653565

GREECE +30 10 779 3777

HUNGARY +36 80 20 11 99

IRELAND +353 1 8379964

ITALY +39 06 305 4343

LATVIA +371 704 2468

LITHUANIA +370 2 36 20 52 or +370 2 36 20 92

MALTA (+356) 21 247 860 or (+356) 21 241 251

NORWAY 22 59 13 00

NETHERLANDS +31 30 274 88 88

POLAND +48 22 619 66 54 or +48 22 619 08 97

PORTUGAL 808 250 143 or +351 21 330 3284

ROMANIA +40 21 230 8000

SLOVAKIA +421 2 54 77 4 166

SLOVENIA +386 41 650 500

SPAIN +34 937 192 561 (08:00-13:00 y 15:00-17:00 / viernes 08:00-15:00)

(Contd. on page 10)

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

Printing date 03.10.2013

Version number 3

Revision: 16.05.2013

Trade name: Methyl Ethyl Ketone

(Contd. of page 9)

SWEDEN +46 8 33 12 31

UNITED KINGDOM 0870 243 2241 or +44 (0)20 7771 5310

· **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 Organization

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 Harmonized 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

· *** Data compared to the previous version altered.**

GB