

MEK

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according to 1907/2006/EC, Article 31

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MEK SAFETY DATA SHEET

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

- 1.1 Product identifier
- Trade name: Methyl Ethyl Ketone (MEK) / 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**
- Solvent Industrial use
Manufacture and Distribution of substance Solvent for coatings
Cleaning agent
Rubber and Polymer processing Formulation and packing of mixtures
- Application of the substance / the mixture Solvent
- 1.3 Details of the supplier of the safety data sheet

- Supplier: **Aquaflame Systems**
Unit 5, Boulton Industrial Estate
Birmingham B18 5AU
Tel: +44(0) 121-233-1088
Email: sales@aquaflamesystems.com
- Further information obtainable from: Contact us at the above office.
- 1.4 Emergency telephone number: Contact us as above (Not 24 hours)

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

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

Hazard Pictograms



GHS07



GHS02

- **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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.

· 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 characterization: Substances · CAS No. Description
78-93-3 butanone
- Identification number(s) · EC number: 201-159-0
- Trade name: Methyl Ethyl Ketone (MEK)
- 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. If liquid has completely soaked through garments to skin, wash skin thoroughly with mild soap and water. Treat soaked clothing as hazardous waste and observe all precautions for the substances. Take affected persons out into the fresh air. Do not leave affected persons unattended.
- **After inhalation:** Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation. Seek immediate medical advice.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly. Remove contaminated clothing. Repeated skin contact may result in irritation and dermatitis. Always wear protective gloves suitable for this product. If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for at least 15 minutes under clean running water. Remove contact lenses if possible. Seek immediate medical advice. Continue to irrigate the eye with clean water. Seek immediate medical advice.
- **After swallowing:** Do NOT induce vomiting; rinse mouth with water, call for medical help immediately. Drink plenty of water and provide fresh air. Call for a doctor immediately.

• 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.

SECTION 5: Firefighting measures

• 5.1 Extinguishing media

Suitable extinguishing agents: CO₂, powder or water spray. Fight larger fires with aqueous film forming foam (AFFF). Cool containers with water spray.

- For safety reasons unsuitable extinguishing agents: Water with full jet.

• 5.2 Special hazards arising from the substance or mixture

Carbon monoxide (CO), if incomplete combustion.

• 5.3 Advice for firefighters

- **Protective equipment:** Wear self-contained respiratory protective device.

• 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

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Keep people at a distance and stay on the windward side. Keep away from ignition sources.

Trade name: Methyl Ethyl Ketone (MEK)

Wear protective clothing.

• 6.2 Environmental precautions:

In case of seepage into the ground inform responsible authorities. 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). Ensure adequate ventilation.

Send for recovery or disposal in suitable receptacles - may need to be UN approved.

Blanket spillage with AFFF Foam Spray to seal from sources of ignition as a precautionary measure.

• 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

Use solvent-proof equipment. Store in cool, dry place in tightly closed receptacles.

Take note of emission threshold.

Use only in well ventilated areas.

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

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

Keep ignition sources away - no naked sparks/flames/fires. Ensure electrical equipment is protected to correct Zone rating (DSEAR Assessed).

Protect against electrostatic charges. Where required - ensure bonding and earthing of containers and process equipment.

Static generation and accumulation may be increased when using fine filters, strainers, mixing with powders and immiscible liquids, high energy/speed mixers. Take extra precautions. Allow static relaxation time for charges to dissipate before next steps. Do not splash fill.

Do not spray onto a naked flame, hot surfaces, electrical switchgear, live/battery connected electrics, or near to any potential sources of ignition.

Flammable gas-air mixtures may form in empty receptacles. Wear shoes with conductive soles.

7.2 Conditions for safe storage, including any incompatibilities

• Storage:

• Requirements to be met by storerooms and receptacles:

Store in a cool location.

Provide solvent resistant, sealed floor. Prevent any seepage into the ground. Provide ventilation for receptacles.

Use only receptacles specifically permitted for this substance/product.

Unsuitable material for receptacle: aluminium.

Store in area marked with EX signs under Dangerous Substances and Explosive Atmosphere Regs.

Follow HSE guidance for storage of flammable substances.

Flameproof/explosion proof electrical equipment must be used (ATEX Regulations)

Only store in suitable bunded storage areas. Do not store plastic IBC's with metal drums of other flammable substances.

• Information about storage in one common storage facility:

Do not store together with alkalis (caustic solutions). Store away from oxidizing agents.

• Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles. Store receptacle in a well ventilated area.

You are recommended to refer to HSE publications HSG51 - The Storage of Flammable Liquids in Containers; and HSG140 - The Safe Use and Handling of Flammable Liquids, for more detailed understanding of the practices to be adhered to.

Plastic IBC's risk sudden and total loss of product in event of fire. Ensure bunded areas are adequate.

Do not store plastic IBC's with other packaged flammable goods. • 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 controls that require monitoring at the workplace

WEL Short-term value: 899 mg/m³, 300 ppm

Long-term value: 600 mg/m³, 200 ppm Sk

• DNELs

Skin contact, exposure 1d, value 1161mg/kg

Inhalation, Value 600mg/m³

• PNECs

Fresh water, value 55.8mg/L

Soil, value 22.5mg/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:

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.

Avoid alcohol consumption while working with the product.

• Respiratory protection:

Use suitable respiratory protective device in case of insufficient ventilation. Filter AX

• **Protection of hands:** Solvent resistant gloves. Use gloves approved to BS EN 374 Chemical Resistant 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

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

• Eye protection:



Tightly sealed goggles. En 166 Standard

• **Body protection:** Protective work clothing

• Risk management measures

Carry out risk assessment under Dangerous Substances and Explosive Atmospheres Regulations (DSEAR), COSHH.

SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties

• General Information

• Appearance:

Form:	Liquid
Colour:	Colourless (<i>Aged product may darken depending upon storage conditions and time period</i>)
Odour:	Recognizable. Like ketone.

• Change in condition

Melting point / Melting range:	-86.3 °C
Boiling point / Boiling range:	79-80.5°C
Flash point:	-4 °C
Ignition temperature:	514 °C
Danger of explosion:	Product is not explosive. However, formation of explosive mixtures are possible.
Explosion limits:	Lower: 1.8 Vol % , Upper: 11.5 Vol %
Vapour pressure at 20 °C:	105 hPa
Density at 20 °C:	0.804-0.807 g/cm ³
Solubility in / Miscibility with water at 20 °C:	290 g/l
Viscosity: Dynamic at 15 °C:	0.423 mPas

• 9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available
- **10.5 Incompatible materials:** Acids, strong oxidising agents, strong alkalis.
- **10.6 Hazardous decomposition products:** Carbon monoxide if incomplete combustion.

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:**
- **Primary irritant effect:**
- **Skin corrosion/irritation**
Prolonged contact with any solvent can result in skin irritation, not classed as an irritant. Always wear suitable gloves when handling.
- **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:** No further relevant information available.
- **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 refuse. Do not allow product to reach sewage system.

• **European waste catalogue** Refer to our office for EWC codes for disposal of used solvent.

• **Uncleaned packaging:**

Recommendation:

Waste Solvent Disposal must be made according to official regulations. Refer to Hazardous Waste Regulations 2005. Requires movement under Consignment note by licensed waste carrier. We can provide this service - please contact us for more details.

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning. Please contact us if you wish to return your used packaging (205litre and IBC's only).

SECTION 14: Transport information

• **14.1 UN-Number**

• **ADR, IMDG, IATA** 1193

• **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, 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

- **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)** LQ4
- **Transport category** 2
- **Tunnel restriction code** D/E
- **UN "Model Regulation":** UN1193, 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**
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
The Dangerous Substances and Explosive Atmosphere Regulations (DSEAR)
- **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.

• **Relevant phrases**

The 'R' phrase listed below are for reference only and do not form the R phrases for the labelling or classification of the product. Refer to section 3 for this information.

• **Training hints**

Make users aware of the contents of this document and train according to use and risks within your operation.

• **Department issuing MSDS:** Product safety department.

• **Contact:** Sales Office in the first instance.

• **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.