1. Identification of the substance/preparation and of the company/undertaking

Trade name: Methyl Ethyl Ketone

Synonyms: Methyl Ethyl Ketone, 2-Butanone, 3-Butanone, Methyl acetone, Ethyl methyl ketone

Use: For industrial use only., Solvents, raw material for printing inks and printing ink additives, Paint related material

Company: Sasol Solvents
A division of Sasol Chemical Industries
Sturdee Avenue 2
ZA 2196 Rosebank

Information (Product safety) Telephone: +27112800000 Fax: +27112800198

Emergency telephone number
Europe, Israel, Africa, Americas +44 (0)208 762 8322
Middle East, Arabic African countries +961 3 487 287
Asia Pacific +65 633 44 177
China +86 10 5100 3039
South Africa +27 (0)17 610 4444

2. Composition/information on ingredients

butanone; ethyl methyl ketone

Contents: <= 99.50 %W/W

CAS-No. 78-93-3
Index-No. 606-002-00-3
Symbol(s) F, Xi
R-phrase(s) -R11 -R36 -R66 -R67

For the full text of the R phrases mentioned in this Section, see Section 16.
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3. Hazards identification

Identification of the risks
R11 Highly flammable.
R36 Irritating to eyes.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours may cause drowsiness and dizziness.

Particular risks to human beings and the environment
Highly flammable.

4. First aid measures

General advice
When symptoms persist or in all cases of doubt seek medical advice.

Inhalation
Move to fresh air in case of accidental inhalation of vapours. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

Skin contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion
If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

Suitable extinguishing media
Water spray, Alcohol-resistant foam, Dry chemical, Carbon dioxide (CO2)

Extinguishing media which must not be used for safety reasons
No information available.

Specific hazards during fire fighting
Vapours may form explosive mixtures with air. Flash back possible over considerable distance.

Special protective equipment for firefighters
Wear self-contained breathing apparatus and protective suit.

Further information
Cool containers / tanks with water spray.
6. Accidental release measures

Personal precautions
Keep people away from and upwind of spill/leak. Remove all sources of ignition. Do not breathe vapours or spray mist. Material can create slippery conditions.

Environmental precautions
Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste.

7. Handling and storage

Handling
Safe handling advice
Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Ensure all equipment is electrically grounded before beginning transfer operations. Take precautionary measures against static discharges.

Advice on protection against fire and explosion
Keep away from heat and sources of ignition. Use explosion-proof equipment.

Storage
Requirements for storage areas and containers
Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Components with workplace control parameters

NATIONAL OCCUPATIONAL EXPOSURE LIMITS

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTANONE</td>
<td>TWA</td>
<td>600 mg/m³</td>
<td>05 2003</td>
<td>EU Exposure Limit Values</td>
</tr>
<tr>
<td>BUTANONE</td>
<td>TWA</td>
<td>200 ppm</td>
<td>05 2003</td>
<td>EU Exposure Limit Values</td>
</tr>
<tr>
<td>BUTANONE</td>
<td>STEL</td>
<td>900 mg/m³</td>
<td>05 2003</td>
<td>EU Exposure Limit Values</td>
</tr>
<tr>
<td>BUTANONE</td>
<td>STEL</td>
<td>300 ppm</td>
<td>05 2003</td>
<td>EU Exposure Limit Values</td>
</tr>
</tbody>
</table>

Engineering measures
Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment
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Respiratory protection  In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection  gloves suitable for permanent contact:
  Material: butyl-rubber
  Break through time: 4 h
  Material thickness: 0.5 mm
unsuitable gloves
  Material: Polyvinylchloride, leather, nitrile rubber/nitrile latex,
natural rubber/natural latex

Eye protection  Safety glasses with side-shields

Skin and body protection  Protective suit, Safety shoes

Hygiene measures  Wash hands before breaks and immediately after handling the product.

Protective measures  Wear suitable protective equipment.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>state of matter</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>mint-like</td>
</tr>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>-86.3 °C</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>79.6 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>-9 °C; closed cup</td>
</tr>
<tr>
<td>Flash point</td>
<td>9 °C; open cup</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>515 °C</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1.4 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>11.4 %(V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>121.323 hPa; 25 °C</td>
</tr>
<tr>
<td>Density</td>
<td>0.805 g/cm3</td>
</tr>
<tr>
<td>Water solubility</td>
<td>partly miscible</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>0.41 mPa.s</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>0.51 mm2/s</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>2.5(Air = 1.0)</td>
</tr>
</tbody>
</table>
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10. Stability and reactivity

Materials to avoid
- Strong oxidizing agents, Incompatible with acids., Halogenated compounds

Hazardous decomposition products
- Carbon oxides

Hazardous reactions
- Hazardous polymerisation does not occur.

11. Toxicological information

Acute oral toxicity
- LD50 rat: 2,737 mg/kg; literature value

Acute inhalation toxicity
- LC50 rat: 23,500 mg/m3; 8 h; literature value

Acute dermal toxicity
- LD50 rabbit: 6,480 mg/kg; literature value

Skin irritation
- rabbit: moderately irritating; literature value

Eye irritation
- rabbit: irritating; literature value

12. Ecological information

Ecotoxicity effects

Toxicity to fish
- LC50 Bluegill sunfish: 4,467 mg/l; 96 h; literature value
- LC50 Poecilia reticulata: 5,700 mg/l; 24 h; literature value
- LC50 Pimephales promelas: 3,200 mg/l; 96 h; literature value

Toxicity to daphnia and other aquatic invertebrates.
- LC50 Daphnia magna: < 520 mg/l; 48 h; literature value

13. Disposal considerations

Product
- In accordance with local and national regulations., Do not contaminate ponds, waterways or ditches with chemical or used container., The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging
- Do not burn, or use a cutting torch on, the empty drum., Triple rinse containers., Can be offered for recycling, re-conditioning or puncture.

14. Transport information

ADR
- UN-No.: 1193; Class: 3; Packaging group: II; F1; Description of the goods: METHYL ETHYL KETONE

RID
- UN-No.: 1193; Class: 3; Packaging group: II; F1; Description of the goods: METHYL ETHYL KETONE
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ADNR
UN-No.: 1193; Class: 3; Packaging group: II; F1; Description of the goods: METHYL ETHYL KETONE

IMDG
UN-No.: 1193; Class: 3; EmS: F-E, S-D; Packaging group: II; Description of the goods: METHYL ETHYL KETONE

ICAO/IATA
UN-No.: 1193; Class: 3; Packaging group: II; Description of the goods: Methyl ethyl ketone

15. Regulatory information
Labelling

Regulatory base 67/548/EEC
Symbol(s) F: Highly flammable
X: Irritant
R-phrase(s) R11: Highly flammable.
R36: Irritating to eyes.
R66: Repeated exposure may cause skin dryness or cracking.
R67: Vapours may cause drowsiness and dizziness.

S-phrase(s) S 2: Keep out of the reach of children.
S 9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.

Hazardous components which must be listed on the label butanone; ethyl methyl ketone

16. Other information
Full text of R-phrases referred to under sections 2 and 3
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R11 Highly flammable.
R36 Irritating to eyes.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours may cause drowsiness and dizziness.

All reasonable efforts were exercised to compile this MSDS in accordance with ISO 11014 and ANSIZ400.1.1993. The MSDS provides information regarding the health, safety and environmental hazards, at the date of issue, to facilitate the safe receipt, use and handling of the product in the workplace. Since Sasol and its subsidiaries cannot anticipate or control all conditions under which the product may be handled, used and received in the workplace, it remains the obligation of each user, receiver or handler to, prior to usage, review this MSDS in the context within which the product will be received, handled or used in the workplace. The user, handler or receiver must ensure that the necessary mitigating measures are in place as regards health and safety. This does not substitute the need or requirement for any relevant risk assessments to be conducted. It further remains the responsibility of the receiver, handler or user to communicate such information to all relevant parties that may be involved in the receipt, use or handling of the product.

Although all reasonable efforts were exercised in the compilation of this MSDS, Sasol does not expressly warrant the accuracy or assume any liability for the incompleteness of the information contained herein or any advice given. The product is sold and risk passes in accordance with the specific terms and conditions of sale.

The MSDS was created by: Aneshia (AA) Sohan
The MSDS was approved by: MSDS may be not approved