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

- Product details
  - Trade name: Methyl Ethyl Ketone
  - Manufacturer/Supplier:
    Petrochem Middle East FZE
    PO Box 17028,
    Jebel Ali Free Zone
    Dubai, UAE
    Ph +971 4 8839222; Fax +971 4 8834133
  - Further information obtainable from: Product safety department.
  - Information in case of Emergency: Product safety department.

2 Composition/information on ingredients

- Chemical characterization:
- CAS No. Description
  78-93-3 butanone
- Identification number(s)
  - EINECS Number: 201-159-0
  - Index number: 606-002-00-3

3 Hazards identification

- Hazard description:
  Xi Irritant
  F Highly flammable

- 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.
  R 11 Highly flammable.
  R 36 Irritating to eyes.
  R 66 Repeated exposure may cause skin dryness or cracking.
  R 67 Vapours may cause drowsiness and dizziness.

4 First aid measures

- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult doctor.

5 Fire-fighting measures

- Suitable extinguishing agents:
  CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
Trade name: Methyl Ethyl Ketone

6 Accidental release measures

- Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.
- Measures for environmental protection: Do not allow to enter sewers/surface or ground water.
- Measures for cleaning/collecting:
  
  Dilute with plenty of water.
  Ensure adequate ventilation.

7 Handling and storage

- Handling:
  
  - Information for safe handling: No special requirement
  
  - Information about fire - and explosion protection:
    Keep ignition sources away - Do not smoke.
    Protect against electrostatic charges.

- Storage:
  
  - Requirements to be met by storerooms and receptacles: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions:
    Keep container tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.

8 Exposure controls/personal protection

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

- Ingredients with limit values that require monitoring at the workplace:

  | 78-93-3 butanone | PEL (USA) | 590 mg/m³, 200 ppm |
  | REL (USA) | Short-term value: 885 mg/m³, 300 ppm |
  | Long-term value: 590 mg/m³, 200 ppm |
  | TLV (USA) | Short-term value: 885 mg/m³, 300 ppm |
  | Long-term value: 590 mg/m³, 200 ppm |
  | BEI | |
  | IOELV (EU) | Short-term value: 900 mg/m³, 300 ppm |
  | Long-term value: 600 mg/m³, 200 ppm |
  | WEL (Great Britain) | Short-term value: 899 mg/m³, 300 ppm |
  | Long-term value: 600 mg/m³, 200 ppm |
  | Sk | |

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

- 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.

- Respiratory protection: Not required.

(Contd. on page 3)
Trade name: Methyl Ethyl Ketone

- **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**
  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

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**9 Physical and chemical properties**

- **General Information**
  - **Form:** Fluid
  - **Colour:** Colourless
  - **Odour:** Pleasant

- **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 air/vapour 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/cm³

- **Solubility in / Miscibility with water at 20°C:** 290 g/l

- **Viscosity:**
  - **Dynamic at 15°C:** 0.423 mPas

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**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

- **Dangerous reactions** No dangerous reactions known.
11 Toxicological information

· Acute toxicity:

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>3300 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>5000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

· Primary irritant effect:
  · on the skin: No irritant effect.
  · on the eye: Irritating effect.

· Sensitization: No sensitizing effects known.

12 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.

13 Disposal considerations

· Product:
  · Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packaging:
  · Recommendation: Disposal must be made according to official regulations.

14 Transport information

· Land transport ADR/RID (cross-border)
  · ADR/RID class: 3 Flammable liquids.
  · Danger code (Kemler): 33
  · UN-Number: 1193
  · Packaging group: II
  · Hazard label: 3
  · Description of goods: 1193 ETHYL METHYL KETONE (METHYL ETHYL KETONE)

· Maritime transport IMDG:
  · IMDG Class: 3
15 Regulatory information

- Labelling according to EU guidelines:
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

- Code letter and hazard designation of product:

  Xi Irritant
  F Highly flammable

- Risk phrases:
  11 Highly flammable.
  36 Irritating to eyes.
  66 Repeated exposure may cause skin dryness or cracking.
  67 Vapours may cause drowsiness and dizziness.

- Safety phrases:
  2 Keep out of the reach of children.
  9 Keep container in a well-ventilated place.
  16 Keep away from sources of ignition - No smoking.

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 MSDS: Product safety department
- Contact: Mr. Menon