1 Identification of the substance/mixture and of the company

- **Product identifier**
- **Trade name:** MIBK
- **Product number:** M080100
- **CAS Number:** 108-10-1
- **EC number:** 203-550-1
- **Index number:** 606-004-00-4

2 Composition/information on ingredients

- **Chemical characterization:** Substances
- **CAS No. Description**
  - 108-10-1 4-methylpentan-2-one
- **Identification number(s)**
- **EC number:** 203-550-1
- **Index number:** 606-004-00-4

3 Hazards identification

- **Classification of the substance or mixture**
  - **GHS02 Flame**
  - **H225** Highly flammable liquid and vapour.
  - **GHS07**
  - **H332** Harmful if inhaled.
  - **H319** Causes serious eye irritation.
  - **H335** May cause respiratory irritation.

- **Label elements**
- **GHS label elements**
  The substance is classified and labelled according to the Globally Harmonized System (GHS).
Material Safety Data Sheet

Trade name: MIBK

- **Hazard pictograms**
  - GHS02
  - GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - methyl isobutyl ketone

- **Hazard statements**
  - Highly flammable liquid and vapour.
  - Harmful if inhaled.
  - Causes serious eye irritation.
  - May cause respiratory irritation.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 2
    - Fire = 3
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - Health = 2
    - Fire = 3
    - Reactivity = 0

- **4 First aid measures**
  - **General information:**
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - **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.
  - **After skin contact:**
    - Immediately rinse with water.
  - **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
  - **After swallowing:** Seek medical treatment.
5 Firefighting measures

- **Suitable extinguishing agents:**
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- **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

- **Handling:**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:**
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.
- **Storage:**
  **Requirements to be met by storerooms and containers:** Store in a cool location.
  **Information about storage in one common storage facility:** Not required.
  **Further information about storage conditions:** Keep container well-sealed in cool, dry location.
  **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
<th>BEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-10-1 methyl isobutyl ketone</td>
<td>410 mg/m³, 100 ppm</td>
<td>Short-term value: 300 mg/m³, 75 ppm</td>
<td>Long-term value: 205 mg/m³, 50 ppm</td>
<td>Short-term value: 307 mg/m³, 75 ppm</td>
</tr>
</tbody>
</table>

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  Keep away from food and beverages.
Trade name: MIBK

Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

**Respiratory equipment:**
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.

**Protection of hands:** PVA gloves

**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** Contact glove manufacture for break-through time.

**Eye protection:**
Tightly sealed goggles

### 9 Physical and chemical properties

**General Information**

- **Appearance:**
  - Form: Fluid
  - Color: Colorless
  - Odor: Characteristic
  - Odour threshold: Not determined.

- **pH-value:** Not determined.

- **Change in condition**
  - Melting point/Melting range: -83.5 °C (-118 °F)
  - Boiling point/Boiling range: 114 °C (237 °F)

- **Flash point:** 14 °C (57 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 460 °C (860 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**
  - Lower: 1.7 Vol %
  - Upper: 9 Vol %

- **Vapor pressure at 20 °C (68 °F):** 8 hPa (6 mm Hg)

- **Density at 20 °C (68 °F):** 0.8008 g/cm³ (6.683 lbs/gal)
  - Relative density: Not determined.
  - Vapour density: Not determined.
  - Evaporation rate: Not determined.

- **Solubility in / Miscibility with**
  - Water at 20 °C (68 °F): 19 g/l
10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Acute toxicity:**

  - **LD/LC50 values that are relevant for classification:**

    | Route  | LD50  |
    |--------|-------|
    | Oral   | 5800 mg/kg (mouse) |
    | 108-10-1 methyl isobutyl ketone  |
    | Oral   | 2080 mg/kg (rat) |
    | Dermal | 16000 mg/kg (rab) |
    | Inhalative | 8.3-16.6 mg/l (rat) |

- **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

- **Acute toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Behavior in environmental systems:**
  - **Bioaccumulative potential:** No further relevant information available.
- **Additional ecological information:**
  - **General notes:**
    Water hazard class 1 (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

- **Waste treatment methods**
- **Recommendation:**
  Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.
Material Safety Data Sheet
acc. to ISO/DIS 11014

Trade name: MIBK

- Uncleaned packagings:
  - Recommendation: Disposal must be made in accordance with Federal, State, and Local regulations.

14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA
    - UN1245

- UN proper shipping name
  - DOT, IMDG, IATA
    - METHYL ISOBUTYL KETONE
  - ADR
    - 1245 METHYL ISOBUTYL KETONE

- Transport hazard class(es)
  - DOT, IMDG, IATA
    - Class 3 Flammable liquids.
    - Label 3

- ADR
  - Class 3 Flammable liquids
  - Label 3

- Packing group
  - DOT, ADR, IMDG, IATA
    - II

- Environmental hazards:
  - Marine pollutant: No

- Special precautions for user
  - Warning: Flammable liquids
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-D

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.

- UN "Model Regulation":
  - UN1245, METHYL ISOBUTYL KETONE, 3, II

15 Regulatory information

- Sara
  - Section 355 (extremely hazardous substances):
    - Substance is not listed.
  - Section 313 (Specific toxic chemical listings):
    - Substance is listed.

(Contd. on page 7)
Trade name: MIBK

- TSCA (Toxic Substances Control Act):
  Substance is listed.
- Proposition 65
  - Chemicals known to cause cancer:
    Substance is not listed.
  - Chemicals known to cause reproductive toxicity for females:
    Substance is not listed.
  - Chemicals known to cause reproductive toxicity for males:
    Substance is not listed.
- Chemicals known to cause developmental toxicity:
  Substance is not listed.
- Carcinogenic categories
  - EPA (Environmental Protection Agency)
    108-10-1 methyl isobutyl ketone
  - IARC (International Agency for Research on Cancer)
    Substance is not listed.
  - NTP (National Toxicology Program)
    Substance is not listed.
  - TLV (Threshold Limit Value established by ACGIH)
    Substance is not listed.
  - NIOSH-Ca (National Institute for Occupational Safety and Health)
    Substance is not listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    Substance is not listed.
- GHS label elements
  The substance is classified and labelled according to the Globally Harmonized System (GHS).
- Hazard pictograms
  GHS02  GHS07
- Signal word Danger
- Hazard-determining components of labelling:
  methyl isobutyl ketone
- Hazard statements
  Highly flammable liquid and vapour.
  Harmful if inhaled.
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  Read label before use.
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(Contd. on page 8)
Trade name: MIBK

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IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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. Bedet
· **Abbreviations and acronyms:**
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  ICAO: International Civil Aviation Organization
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent