Material Safety Data Sheet
acc. to OSHA and ANSI
Printing date 08/13/2004 Reviewed on 06/02/2004

- 1 Identification of substance:
  - Product details:
    - Product name: 4-Methyl-2-pentanone
  - Stock number: A11618

- Manufacturer/Supplier:
  Alfa Aesar, A Johnson Matthey Company
  Johnson Matthey Catalog Company, Inc.
  30 Bond Street
  Ward Hill, MA 01835-8099
  Emergency Phone: (978) 521-6300
  CHEMTREC: (800) 424-9300
  Web Site: www.alfa.com

- Information Department: Health, Safety and Environmental Department

- Emergency information:
  During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

- 2 Composition/Data on components:
  - Chemical characterization:
    - Description: (CAS#)
      4-Methyl-2-pentanone (CAS# 108-10-1): 100%

  - Identification number(s):
    - EINECS Number: 203-550-1
    - EU Number: 606-004-00-4
resulting gases:
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide

• Protective equipment:

Wear self-contained respirator.
Wear fully protective impervious suit.

• 6 Accidental release measures

• Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources

• Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

• Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Keep away from ignition sources.

• Additional information:

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

• Information for safe handling:

Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

• Information about protection against explosions and fires:

Keep ignition sources away.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

• Storage

• Requirements to be met by storerooms and receptacles:
Check protective gloves prior to each use for their proper condition.

- **Material of gloves**

  The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

- **Eye protection**: Safety glasses

- **Body protection**: Protective work clothing.

- **9 Physical and chemical properties:**

  - **General Information**

    - **Form**: Liquid
    - **Color**: Colorless
    - **Odor**: Like ketone

<table>
<thead>
<tr>
<th>Value/Range</th>
<th>Unit</th>
<th>Method</th>
</tr>
</thead>
</table>

- **Change in condition**

  - **Melting point/Melting range**: -80 °C
  - **Boiling point/Boiling range**: 117-118 °C
  - **Sublimation temperature / start**: Not determined

- **Flash point**: 13 °C

- **Ignition temperature**: 460 °C

- **Decomposition temperature**: Not determined

- **Danger of explosion**:

  Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

- **Explosion limits**:

  - **Lower**: 1.7 Vol %
• Other information (about experimental toxicology):

Reproductive effects have been observed on tests with laboratory animals.

• Subacute to chronic toxicity:

4-Methyl-2-pentanone (methy isobutyl ketone) is moderately toxic by ingestion and is irritating to the skin, eyes and mucous membranes. It is narcotic in high concentrations. Animal studies have shown convulsions, kidney, ureter, bladder and liver effects from exposure.

• Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
Behavioral - convulsions or effect on seizure threshold.
Related to Chronic Data - death.
Liver - changes in liver weight.
Kidney, Ureter, Bladder - changes in bladder weight.
Kidney, Ureter, Bladder - other changes in urine composition.
Kidney, Ureter, Bladder - other changes.
Endocrine - changes in adrenal weight.
Brain and Coverings - recordings from specific areas of CNS.
Nutritional and Gross Metabolic - body temperature decrease.
Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - other oxidoreductases.
Blood - changes in serum composition.
Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).
Reproductive - Specific Developmental Abnormalities - musculoskeletal system.
Reproductive - Effects on Embryo or Fetus - fetal death.
Reproductive - Specific Developmental Abnormalities - Central Nervous System.
Reproductive - Specific Developmental Abnormalities - cardiovascular (circulatory) system.

• Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

• 12 Ecological information:

• General notes:

Do not allow material to be released to the environment without proper governmental permits.
• **Page:** 3089
• **UN Number:** 1245
• **Label** 3
• **Packaging group:** II
• **EMS Number:** F-E,S-D
• **MFAG:** 300
• **Proper shipping name:** Methyl isobutyl ketone

**Air transport ICAO-TI and IATA-DGR:**
• **ICAO/IATA Class:** 3
• **UN/ID Number:** 1245
• **Label** 3
• **Packaging group:** II
• **Proper shipping name:** Methyl isobutyl ketone

**15 Regulations**

**Product related hazard informations:**

**Hazard symbols:**

Xn Harmful F Highly flammable

**Risk phrases:**

11 Highly flammable.
20 Harmful by inhalation.
36/37 Irritating to eyes and respiratory system.
66 Repeated exposure may cause skin dryness or cracking

**Safety phrases:**

9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
29 Do not empty into drains.

**National regulations**