1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2-Heptanone
Product Number : 02476
Brand : Fluka
Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid, Target Organ Effect, Harmful by ingestion.

Target Organs
Central nervous system, Eyes, Skin, Respiratory system, Peripheral nervous system.

GHS Classification
Flammable liquids (Category 3)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H302 + H332 Harmful if swallowed or if inhaled.

Precautionary statement(s) none

HMIS Classification

Health hazard: 1
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 0

NFPA Rating

Health hazard: 1
Fire: 2
Reactivity Hazard: 0
Potential Health Effects

**Inhalation**
May be harmful if inhaled. May cause respiratory tract irritation.

**Skin**
Harmful if absorbed through skin. May cause skin irritation.

**Eyes**
May cause eye irritation.

**Ingestion**
Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Methyl pentyl ketone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>C(<em>7)H(</em>{14})O</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>114.19 g/mol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptan-2-one</td>
<td>110-43-0</td>
<td>203-767-1</td>
<td>606-024-00-3</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Flush eyes with water as a precaution.

**If swallowed**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**Special protective equipment for fire-fighters**
Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides

**Further information**
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptan-2-one</td>
<td>110-43-0</td>
<td>TWA</td>
<td>50 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| TWA              | 100 ppm  | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|                 | 465 mg/m³|                                                |

The value in mg/m³ is approximate.

| TWA              | 100 ppm  | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
|                 | 465 mg/m³|                                                             |

| TWA              | 100 ppm  | USA. NIOSH Recommended Exposure Limits                      |
|                 | 465 mg/m³|                                                             |

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<table>
<thead>
<tr>
<th>Form</th>
<th>clear, liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
</tbody>
</table>

Safety data

| pH         | no data available |

Fluka - 02476
Melting point/freezing point: -35 °C (-31 °F) - lit.

Boiling point: 149 - 150 °C (300 - 302 °F) - lit.

Flash point: 41 °C (106 °F) - closed cup

Ignition temperature: 393 °C (739 °F)

Autoignition temperature: no data available

Lower explosion limit: 1.11 % (V)

Upper explosion limit: 7.9 % (V)

Vapour pressure: 2.85 hPa (2.14 mmHg) at 20 °C (68 °F)

Density: 0.82 g/mL at 25 °C (77 °F)

Water solubility: no data available

Partition coefficient: log Pow: 1.98

Relative vapour density: 3.94 - (Air = 1.0)

Odour: no data available

Odour Threshold: no data available

Evaporation rate: no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents, Strong reducing agents, Strong bases

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 1,670 mg/kg

Inhalation LC50
Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Open irritation test - 24 h

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects
Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion Harmful if swallowed.
Skin Harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Central nervous system depression

Synergistic effects
no data available

Additional Information
RTECS: MJ5075000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 126 - 137 mg/l - 96 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available
Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

14. TRANSPORT INFORMATION

**DOT (US)**
UN number: 1110  Class: 3  Packing group: III
Proper shipping name: n-Amyl methyl ketone
Marine pollutant: No
Poison Inhalation Hazard: No

**IMDG**
UN number: 1110  Class: 3  Packing group: III  EMS-No: F-E, S-D
Proper shipping name: AMYL METHYL KETONE
Marine pollutant: No

**IATA**
UN number: 1110  Class: 3  Packing group: III
Proper shipping name: n-Amyl methyl ketone

15. REGULATORY INFORMATION

**OSHA Hazards**
Combustible Liquid, Target Organ Effect, Harmful by ingestion.

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
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<th>CAS-No.</th>
<th>Revision Date</th>
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<td>1994-04-01</td>
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**Pennsylvania Right To Know Components**

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**New Jersey Right To Know Components**

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**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.