1. PRODUCT AND COMPANY IDENTIFICATION

- **Product name**: 2-Pentanone
- **Product Number**: 537748
- **Brand**: Sigma-Aldrich
- **Supplier**: Sigma-Aldrich Corporation
  3050 Spruce Street
  SAINT LOUIS MO  63103
  USA
- **TelephoneNumber**: +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**: Flammable liquid, Target Organ Effect, Highly toxic by inhalation, Harmful by ingestion., Irritant, Carcinogen
- **Target Organs**: Nerves., Liver, Heart
- **GHS Classification**
  - Flammable liquids (Category 2)
  - Acute toxicity, Oral (Category 4)
  - Skin irritation (Category 2)
  - Eye irritation (Category 2A)
  - Specific target organ toxicity - single exposure (Category 3)

**GHS Label elements, including precautionary statements**

- **Pictogram**:
  - ![Flammable Liquid and Skin Irritation Pictograms]
- **Signal word**: Danger
- **Hazard statement(s)**
  - **H225**: Highly flammable liquid and vapour.
  - **H302**: Harmful if swallowed.
  - **H315**: Causes skin irritation.
  - **H319**: Causes serious eye irritation.
  - **H335**: May cause respiratory irritation.
- **Precautionary statement(s)**
  - **P210**: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - **P261**: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
  - **P305 + P351 + P338**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**HMIS Classification**
Health hazard: 3  
Chronic Health Hazard: *  
Flammability: 3  
Physical hazards: 0

NFPA Rating  
Health hazard: 2  
Fire: 3  
Reactivity Hazard: 0

Potential Health Effects  
Inhalation: May be fatal if inhaled. Causes respiratory tract irritation.  
Skin: Harmful if absorbed through skin. Causes skin irritation.  
Eyes: Causes eye irritation.  
Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS  
Synonyms: Methyl propyl ketone  
Formula: C₅H₁₀O  
Molecular Weight: 86.13 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentan-2-one</td>
<td>Flam. Liq. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H225, H302, H315, H319, H335</td>
<td>-</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>107-87-9</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-528-1</td>
<td></td>
</tr>
<tr>
<td>4-Methylpentan-2-one</td>
<td>Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2; STOT SE 3; H225, H319, H332, H335, EUH066</td>
<td>10 - 30 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>108-10-1</td>
<td></td>
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<tr>
<td>EC-No.</td>
<td>203-550-1</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>606-004-00-4</td>
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</tbody>
</table>

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

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

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

5. FIREFIGHTING MEASURES  
Conditions of flammability  
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters
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. Evacuate personnel to safe areas. 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. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
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.

Store under inert gas.

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>Pentan-2-one</td>
<td>107-87-9</td>
<td>STEL</td>
<td>150 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>200 ppm 700 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
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<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>250 ppm 875 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
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<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>200 ppm 700 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>150 ppm 530 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>4-Methylpentan-2-one</td>
<td>108-10-1</td>
<td>TWA</td>
<td>50 ppm 205 mg/m3</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>75 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<tr>
<td>Remarks</td>
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<td></td>
<td></td>
<td>Upper Respiratory Tract irritation Headache Dizziness 2010 Adoption Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>50 ppm 205 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>75 ppm 300 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
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<tr>
<td></td>
<td>TWA</td>
<td>Limit</td>
<td>Source</td>
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<td>----------</td>
<td>-----</td>
<td>-------------</td>
<td>------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>410 ppm</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The value in mg/m3 is approximate.</td>
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</tr>
<tr>
<td>TWA</td>
<td>20</td>
<td>410 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<td></td>
<td></td>
<td></td>
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<td>ST</td>
<td>75</td>
<td>300 mg/m3</td>
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<td></td>
</tr>
</tbody>
</table>

**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**

- **Form**: liquid
- **Colour**: no data available

**Safety data**

- **pH**: no data available
- **Melting point/freezing point**: Melting point/range: -78 °C (-108 °F)
- **Boiling point**: 101 - 105 °C (214 - 221 °F) at 1,013 hPa (760 mmHg)
- **Flash point**: 12 °C (54 °F) - closed cup
- **Ignition temperature**: no data available
- **Auto-ignition temperature**: 505 °C (941 °F)
- **Lower explosion limit**: 1.5 % (V)
- **Upper explosion limit**: 8.2 % (V)
- **Vapour pressure**: 36 hPa (27 mmHg) at 20 °C (68 °F)
Density  
0.806 g/cm³

Water solubility  
no data available

Partition coefficient:  
n-octanol/water  
no data available

Relative vapor density  
no data available

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  
Vapours may form explosive mixture with air.

Conditions to avoid  
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid  
Strong bases, Oxidizing agents, Reducing agents

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  
Inhalation LC50  
Dermal LD50  
no data available

Other information on acute toxicity  
no data available

Skin corrosion/irritation  
no data available

Serious eye damage/eye irritation  
Eyes: 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.

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  

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 fatal if inhaled. Causes respiratory tract irritation.
- **Ingestion**: Harmful if swallowed.
- **Skin**: Harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: Causes eye irritation.

Signs and Symptoms of Exposure
Lowered blood pressure, Central nervous system depression, narcosis, Nausea, Dizziness, Headache, Exposure to and/or consumption of alcohol may increase toxic effects.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity
no data available

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. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1249  Class: 3  Packing group: II
Proper shipping name: Methyl propyl ketone
Marine Pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1249  Class: 3  Packing group: II  EMS-No: F-E, S-D
Proper shipping name: METHYL PROPYL KETONE
Marine Pollutant: No

IATA
UN number: 1249  Class: 3  Packing group: II
Proper shipping name: Methyl propyl ketone

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect, Highly toxic by inhalation, Harmful by ingestion., Irritant, Carcinogen

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
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
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<tr>
<td>108-10-1</td>
<td>1993-04-24</td>
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</tbody>
</table>

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

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>CAS-No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>107-87-9</td>
<td>1991-07-01</td>
</tr>
<tr>
<td>108-10-1</td>
<td>1993-04-24</td>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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<td>108-10-1</td>
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</tr>
</tbody>
</table>

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

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Acute Tox.  Acute toxicity
EUH066  Repeated exposure may cause skin dryness or cracking.
Eye Irrit.  Eye irritation
Flam. Liq.  Flammable liquids
H225  Highly flammable liquid and vapour.
H302  Harmful if swallowed.
H315  Causes skin irritation.
H319  Causes serious eye irritation.
H332  Harmful if inhaled.
H335  May cause respiratory irritation.
Skin Irrit.  Skin irritation
STOT SE  Specific target organ toxicity - single exposure
Further information
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