Section 1 - Product and Company Information

Product Name                 CYCLOPENTANONE, 99+%
Product Number               W391018
Brand                        ALDRICH

Company                      Sigma-Aldrich
Address                      3050 Spruce Street
                            SAINT LOUIS MO 63103 US
Technical Phone:             800-325-5832
Fax:                         800-325-5052
Emergency Phone:             314-776-6555

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYCLOPENTANONE, FOR MANUFACTURING</td>
<td>120-92-3</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula         C5H8O
Synonyms        Adipic ketone * Dumasin * Ketocyclopentane * Ketopentamethylene
RTECS Number:   GY4725000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
  Flammable. Irritant.
  Irritating to eyes and skin.

HMIS RATING
  HEALTH: 2
  FLAMMABILITY: 3
  REACTIVITY: 0

NFPA RATING
  HEALTH: 2
  FLAMMABILITY: 3
  REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
  If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
  If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
  In case of contact, immediately wash skin with soap and copious
amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS
Flammable Hazards: Yes

EXPLOSION HAZARDS
Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT
86 °F   30 °C   Method: closed cup

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: 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.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep container closed. Keep away from heat, sparks, and open flame.
Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Color: Colorless</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Form: Clear liquid</td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>84.12 AMU</td>
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</tr>
<tr>
<td>pH</td>
<td>N/A</td>
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</tr>
<tr>
<td>BP/BP Range</td>
<td>127.0 – 131.0 °C</td>
<td></td>
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<tr>
<td>MP/MP Range</td>
<td>- 51.0 °C</td>
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<tr>
<td>Freezing Point</td>
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</tr>
<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
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</tr>
<tr>
<td>SG/Density</td>
<td>0.947 g/cm³</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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<tr>
<td>VOC Content</td>
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<td></td>
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<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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<tr>
<td>Evaporation Rate</td>
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<td></td>
</tr>
<tr>
<td>Viscosity</td>
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<tr>
<td>Surface Tension</td>
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<tr>
<td>Partition Coefficient</td>
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<td></td>
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<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Flash Point</td>
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<td>Explosion Limits</td>
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<tr>
<td>Flammability</td>
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<td>Autoignition Temp</td>
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<tr>
<td>Refractive Index</td>
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<td>Optical Rotation</td>
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<tr>
<td>Miscellaneous Data</td>
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<tr>
<td>Solubility</td>
<td>N/A</td>
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</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity
STABILITY
Stable: Stable.
Materials to Avoid: Strong oxidizing agents, Strong bases, Strong reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes eye irritation.
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Inhalation
Rat
19,500 mg/m3
LC50
Remarks: Liver: Other changes. Lungs, Thorax, or Respiration: Dyspnea. Lungs, Thorax, or Respiration: Other changes.

Intraperitoneal
Mouse
1950 MG/KG
LD50

Oral
Mammal
2000 mg/kg
LD50

IRRITATION DATA

Skin
Rabbit
500 mg
24H

Skin
Rabbit
500 mg
Remarks: Mild irritation effect

Eyes
Rabbit
100 mg
Remarks: Severe irritation effect
Eyes
Rabbit
100 mg
4S
Remarks: Rinsed

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Cyclopentanone
UN#: 2245
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Cyclopentanone
IATA UN Number: 2245
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 10-36/38
Risk Statements: Flammable. Irritating to eyes and skin.
S: 23
Safety Statements: Do not breathe vapor.

US CLASSIFICATION AND LABEL TEXT
Risk Statements: Irritating to eyes and skin.
Safety Statements: Do not breathe vapor.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No
WARRANTY

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 Inc., 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. Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.