Section 1 - Product and Company Information

Product Name                 4-HYDROXY-4-METHYL-2-PENTANONE
Product Number               31450
Brand                        FLUKA
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

Substance Name                          CAS #                 SARA 313
4-HYDROXY-4-METHYL-2-PENTANONE          123-42-2              No

Formula         C6H12O2
Synonyms        Diacetonalcohol (Dutch) * Diacetonalcool (Italian) * Diacetonalkohol (German) * Diacetone * Diacetone alcohol (ACGIH:OSHA) * Diacetone-alcool (French) * Diketone alcohol * 4-Hydroxy-2-keto-4-methylpentane * 4-Hydroxy-4-methyl-pentan-2-on (German, Dutch) * 4-Hydroxy-4-methylpentanone-2 * 4-Hydroxy-4-methyl-2-pentanone * 4-Hydroxy-4-methyl pentan-2-one * 4-Hydroxy-4-methyl-2-pentanone (OSHA) * 4-Idrossi-4-metil-pentan-2-one (Italian) * 2-Methyl-2-pentanol-4-one * Pyranton * Tyranton
RTECS Number:   SA9100000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Irritant.
Irritating to skin. Risk of serious damage to eyes.
Target organ(s): Blood. Kidneys. Combustible.

HMIS RATING
HEALTH: 2*
FLAMMABILITY: 2
REACTIVITY: 0

NFPA RATING
HEALTH: 2
FLAMMABILITY: 2
REACTIVITY: 0

*additional chronic hazards present.

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

FLASH POINT
143 °F   62 °C   Method: closed cup

EXPLOSION LIMITS
Lower: 1.8 %   Upper: 6.9 %

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): Emits toxic fumes under fire conditions. Combustible liquid.

Section 6 - Accidental Release Measures

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

METHODS FOR CLEANING UP
Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage
HANDLING
User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Keep away from heat and open flame.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Mechanical exhaust required. Safety shower and eye bath.

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.

EXPOSURE LIMITS, RTECS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>ACGIH</td>
<td>TWA</td>
<td>50 PPM</td>
</tr>
<tr>
<td>USA</td>
<td>MSHA</td>
<td>TWA</td>
<td>50 PPM (240 MG/M3)</td>
</tr>
<tr>
<td>USA</td>
<td>OSHA</td>
<td>PEL</td>
<td>8H TWA 50 PPM (240 MG/M3)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>OEL</td>
<td>Remarks: check ACGIH TLV</td>
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</tr>
<tr>
<td>USA</td>
<td>NIOSH</td>
<td>TWA</td>
<td>50 PPM</td>
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EXPOSURE LIMITS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Poland</td>
<td>NDS</td>
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<td>240 mg/m3</td>
</tr>
<tr>
<td>Poland</td>
<td>NDSCh</td>
<td></td>
<td>-</td>
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<td>Poland</td>
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</table>

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Color: Slightly yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Form: Clear liquid</td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>116.16 AMU</td>
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<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>158.0 - 162.0 °C</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>N/A</td>
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</tr>
<tr>
<td>Freezing Point</td>
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</tr>
<tr>
<td>Vapor Pressure</td>
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</tr>
<tr>
<td>Vapor Density</td>
<td>4 g/l</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<td></td>
</tr>
<tr>
<td>Volatile%</td>
<td>N/A</td>
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</tbody>
</table>
STABILITY

Stable: Stable.
Materials to Avoid: Oxidizing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

ROUTE OF EXPOSURE

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

TARGET ORGAN(S) OR SYSTEM(S)


SIGNS AND SYMPTOMS OF EXPOSURE

Headache, nausea, drowsiness, and fatigue. Blood effects.
Prolonged or repeated contact with skin can cause defatting and dermatitis. Contact with eyes can cause redness, tearing, and blurred vision. Ingestion may cause gastrointestinal irritation. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Can cause CNS depression.

TOXICITY DATA

Inhalation
Rat
1,500 ppm
LC50

Oral
Rat
2520 mg/kg
LD50

Oral
Mouse
3950 mg/kg
LD50

Intraperitoneal
Mouse
933 MG/KG
LD50

Skin
Rabbit
13500 mg/kg
LD50

IRRITATION DATA

Eyes
Human
100 ppm
15M

Skin
Rabbit
10 mg
24H
Remarks: Open irritation test

Skin
Rabbit
500 mg
Remarks: Open irritation test

Eyes
Rabbit
20 mg
Remarks: Severe irritation effect

Eyes
Rabbit
0.1 ml
24H
Remarks: Severe irritation effect

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: Lepomis macrochirus (Bluegill)
Time: 96 h
Value: 420 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 24 h
Value: 9,000 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Diacetone alcohol
UN#: 1148
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Diacetone alcohol
IATA UN Number: 1148
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 36
Risk Statements: Irritating to eyes.
S: 24/25
Safety Statements: Avoid contact with skin and eyes.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Irritant.
Risk Statements: Irritating to skin. Risk of serious damage to eyes.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

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

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

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 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.