1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Acetylacetone
Product Number : P7754
Brand : Sigma-Aldrich
Supplier : Sigma-Aldrich

Supplier Address : 3050 Spruce Street
SAINT LOUIS MO  63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone #: (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., Toxic by skin absorption, Irritant

Target Organs
Thymus., Nerves.

GHS Classification
Flammable liquids (Category 3)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 3)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 + H331 Toxic in contact with skin or if inhaled
H316 Causes mild skin irritation.
H318 Causes serious eye damage.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311 Call a POISON CENTER or doctor/ physician.
HMIS Classification

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

NFPA Rating

Health hazard: 2
Fire: 2
Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: Toxic if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: 2,4-Pentanedione

Formula: C₅H₈O₂
Molecular Weight: 100.12 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tr>
<td>Acetylacetone</td>
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<tr>
<td>CAS-No.</td>
<td>123-54-6</td>
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<td>EC-No.</td>
<td>204-634-0</td>
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<td>Index-No.</td>
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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. Take victim immediately to hospital. 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**
Wear respiratory protection. Avoid breathing vapours, 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. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

**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.

**Splash contact**
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 120 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). 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**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form: liquid
Colour: no data available

Safety data
pH: 6 at 200 g/l at 20 °C (68 °F)
Melting point/freezing point: Melting point/range: -23 °C (-9 °F) - lit.
Boiling point: 140.4 °C (284.7 °F) - lit.
Flash point: 38 °C (100 °F) - closed cup
Ignition temperature: 350 °C (662 °F)
Auto-ignition temperature: no data available
Lower explosion limit: 1.7 %(V)
Upper explosion limit: 11.4 %(V)
Vapour pressure: no data available
Density: 0.975 g/cm³ at 25 °C (77 °F)
Water solubility: soluble
Partition coefficient: n-octanol/water: log Pow: 1.9
Relative vapour density: 3.46 - (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, Reducing agents, Strong bases, Metals

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 - male - 760 mg/kg
LD50 Oral - rat - female - 570 mg/kg

Inhalation LC50
LC50 Inhalation - rat - 4 h - 5.1 mg/l
Dermal LD50
LD50 Dermal - rabbit - male - 790 mg/kg
LD50 Dermal - rabbit - female - 1,370 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation
Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Genotoxicity in vitro - Hamster - ovary
Mutation in mammalian somatic cells.

Genotoxicity in vivo - rat - negative
Micronucleus test

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
Developmental Toxicity - rat - Inhalation
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Ingestion of excessive amounts by pregnant animals resulted in maternal and foetal toxicity.

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. Causes respiratory tract irritation.
Ingestion Harmful if swallowed.
Skin Toxic if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.

Signs and Symptoms of Exposure
Inhalation may provoke the following symptoms:; Dizziness, Suffocation
12. ECOLOGICAL INFORMATION

Toxicity
- Toxicity to fish: LC50 - other fish - 106 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 40 mg/l - 24 h
- EC100 - Daphnia magna (Water flea) - 90 mg/l - 24 h
- LC50 - Daphnia magna (Water flea) - 34,409 µg/l - 48 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. 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: 2310  Class: 3 (6.1)  Packing group: III
- Proper shipping name: Pentane-2,4-dione
- Reportable Quantity (RQ): Marine pollutant: No  Poison Inhalation Hazard: No

IMDG
- UN number: 2310  Class: 3 (6.1)  Packing group: III  EMS-No: F-E, S-D
- Proper shipping name: PENTANE-2,4-DIONE
- Marine pollutant: No

IATA
- UN number: 2310  Class: 3 (6.1)  Packing group: III
- Proper shipping name: Pentane-2,4-dione

15. REGULATORY INFORMATION

OSHA Hazards
- Combustible Liquid, Target Organ Effect, Harmful by ingestion., Toxic by skin absorption, Irritant
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 Minims) 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
- Acetylacetone
  - CAS-No.: 123-54-6
  - Revision Date: 1993-04-24

Pennsylvania Right To Know Components
- Acetylacetone
  - CAS-No.: 123-54-6
  - Revision Date: 1993-04-24

New Jersey Right To Know Components
- Acetylacetone
  - CAS-No.: 123-54-6
  - Revision Date: 1993-04-24

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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