

## Material Safety Data Sheet

Version 4.2

Revision Date 01/19/2012

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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 3-Pentanone  
 Product Number : 345121  
 Brand : Sigma-Aldrich  
 Supplier : Sigma-Aldrich  
 3050 Spruce Street  
 SAINT LOUIS MO 63103  
 USA  
 Telephone : +1 800-325-5832  
 Fax : +1 800-325-5052  
 Emergency Phone # (For : (314) 776-6555  
 both supplier and  
 manufacturer)  
 Preparation Information : Sigma-Aldrich Corporation  
 Product Safety - Americas Region  
 1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Flammable liquid, Irritant

##### GHS Classification

Flammable liquids (Category 2)  
 Acute toxicity, Oral (Category 5)  
 Skin irritation (Category 3)  
 Eye irritation (Category 2A)  
 Specific target organ toxicity - single exposure (Category 3)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.  
 H303 May be harmful if swallowed.  
 H316 Causes mild skin irritation.  
 H319 Causes serious eye irritation.  
 H335 + H336 May cause respiratory irritation, and drowsiness or dizziness.

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: 2  
 Flammability: 3  
 Physical hazards: 0

**NFPA Rating**

Health hazard: 2  
Fire: 3  
Reactivity Hazard: 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.  
**Skin** May be harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** May be harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : Diethyl ketone

Formula : C<sub>5</sub>H<sub>10</sub>O

Molecular Weight : 86.13 g/mol

| Component             |              | Concentration |
|-----------------------|--------------|---------------|
| <b>Diethyl ketone</b> |              |               |
| CAS-No.               | 96-22-0      | -             |
| EC-No.                | 202-490-3    |               |
| Index-No.             | 606-006-00-5 |               |

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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. 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.

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**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.

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**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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

| Components     | CAS-No.                                                              | Value | Control parameters   | Basis                                                         |
|----------------|----------------------------------------------------------------------|-------|----------------------|---------------------------------------------------------------|
| Diethyl ketone | 96-22-0                                                              | TWA   | 200 ppm              | USA. ACGIH Threshold Limit Values (TLV)                       |
| Remarks        | Central Nervous System impairment Upper Respiratory Tract irritation |       |                      |                                                               |
|                |                                                                      | STEL  | 300 ppm              | USA. ACGIH Threshold Limit Values (TLV)                       |
|                | Central Nervous System impairment Upper Respiratory Tract irritation |       |                      |                                                               |
|                |                                                                      | TWA   | 200 ppm<br>705 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
|                |                                                                      | TWA   | 200 ppm<br>705 mg/m3 | USA. NIOSH Recommended Exposure Limits                        |

### 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

Impervious clothing, 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

|        |               |
|--------|---------------|
| Form   | clear, liquid |
| Colour | colourless    |

### Safety data

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| pH                                     | 6.2 at 50 g/l at 20 °C (68 °F)              |
| Melting point/freezing point           | Melting point/range: -42 °C (-44 °F) - lit. |
| Boiling point                          | 101.5 °C (214.7 °F) - lit.                  |
| Flash point                            | 7 °C (45 °F) - closed cup                   |
| Ignition temperature                   | 425 °C (797 °F)                             |
| Autoignition temperature               | no data available                           |
| Lower explosion limit                  | 1.6 %(V)                                    |
| Upper explosion limit                  | 7.7 %(V)                                    |
| Vapour pressure                        | 37.5 hPa (28.1 mmHg) at 20 °C (68 °F)       |
| Density                                | 0.813 g/cm <sup>3</sup> at 25 °C (77 °F)    |
| Water solubility                       | slightly soluble                            |
| Partition coefficient: n-octanol/water | log Pow: 0.85                               |
| Relative vapour density                | 2.97<br>- (Air = 1.0)                       |
| Odour                                  | no data available                           |
| Odour Threshold                        | no data available                           |
| Evaporation rate                       | no data available                           |

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## 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

Oxidizing agents, Strong bases

### Hazardous decomposition products

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

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 2,140 mg/kg

#### Inhalation LC50

**Dermal LD50**

LD50 Dermal - rabbit - 16,260 mg/kg

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

Skin - rabbit - Mild skin irritation - 24 h

**Serious eye damage/eye irritation**

Eyes - rabbit - Moderate eye irritation

**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)**

May cause respiratory irritation.

May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

- |                   |                                                                                                             |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Inhalation</b> | May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness. |
| <b>Ingestion</b>  | May be harmful if swallowed.                                                                                |
| <b>Skin</b>       | May be harmful if absorbed through skin. Causes skin irritation.                                            |
| <b>Eyes</b>       | Causes eye irritation.                                                                                      |

**Synergistic effects**

no data available

**Additional Information**

RTECS: SA8050000

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 1,470 - 1,600 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

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**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.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 1156 Class: 3 Packing group: II  
Proper shipping name: Diethyl ketone  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1156 Class: 3 Packing group: II EMS-No: F-E, S-D  
Proper shipping name: DIETHYL KETONE  
Marine pollutant: No

**IATA**

UN number: 1156 Class: 3 Packing group: II  
Proper shipping name: Diethyl ketone

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**15. REGULATORY INFORMATION**

**OSHA Hazards**

Flammable liquid, 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 Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Fire Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**

Diethyl ketone

CAS-No.  
96-22-0

Revision Date  
1994-04-01

**Pennsylvania Right To Know Components**

Diethyl ketone

CAS-No.  
96-22-0

Revision Date  
1994-04-01

## New Jersey Right To Know Components

Diethyl ketone

CAS-No.  
96-22-0

Revision Date  
1994-04-01

### 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.

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## 16. OTHER INFORMATION

### Further information

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