# SAFETY DATA SHEET

Version 6.3
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : 3-Pentanone

Product Number : 127604
Brand : SIGALD
Index-No. : 606-006-00-5
CAS-No. : 96-22-0

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, Central nervous system, H335, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger



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Hazard statement(s)

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |

Precautionary statement(s)

| | |
|---|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ ventilating/ lighting equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/ eye protection/ face protection. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P337 + P313 | If eye irritation persists: Get medical advice/ attention. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| | | |
|---|---|---|
| Synonyms | : | Diethyl ketone |
| Formula | : | $C_5H_{10}O$ |
| Molecular weight | : | 86.13 g/mol |
| CAS-No. | : | 96-22-0 |
| EC-No. | : | 202-490-3 |
| Index-No. | : | 606-006-00-5 |

| Component | Classification | Concentration |
|---|---|---|
| **Diethyl ketone** | | |
| | Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H335, H336 | <= 100 % |



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For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of 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.

### 4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed
No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture
Carbon oxides

### 5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information
Use water spray to cool unopened containers.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. 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.
For personal protection see section 8.



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### 6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3 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).

### 6.4 Reference to other sections
For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 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.
For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities
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.
Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Components with workplace control parameters**

| Component | 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<br>Upper Respiratory Tract irritation | | |
| | | STEL | 300 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | | Central Nervous System impairment<br>Upper Respiratory Tract irritation | | |



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| | | | | |
|---|---|---|---|---|
| | | TWA | 200 ppm<br>705 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | STEL | 300 ppm<br>1,057 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | PEL | 200 ppm<br>705 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

## 8.2 Exposure controls

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face 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 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: 30 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.

**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.

**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).



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**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Appearance | Form: clear, liquid<br>Colour: colourless |
| b) | Odour | No data available |
| c) | Odour Threshold | No data available |
| d) | pH | 6.2 at 50 g/l at 20 °C (68 °F) |
| e) | Melting point/freezing point | Melting point/range: -42 °C (-44 °F) - lit. |
| f) | Initial boiling point and boiling range | 101.5 °C 214.7 °F - lit. |
| g) | Flash point | 7 °C (45 °F) - closed cup |
| h) | Evaporation rate | No data available |
| i) | Flammability (solid, gas) | No data available |
| j) | Upper/lower flammability or explosive limits | Upper explosion limit: 7.7 %(V)<br>Lower explosion limit: 1.6 %(V) |
| k) | Vapour pressure | 37.5 hPa at 20 °C (68 °F) |
| l) | Vapour density | 2.97 - (Air = 1.0) |
| m) | Relative density | 0.813 g/cm3 at 25 °C (77 °F) |
| n) | Water solubility | 50 g/l at 20 °C (68 °F) |
| o) | Partition coefficient: n-octanol/water | log Pow: 0.85 |
| p) | Auto-ignition temperature | 455 °C (851 °F) |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

### 9.2 Other safety information

| | |
|---|---|
| Surface tension | 25.33 mN/m at 15 °C (59 °F) |
| Relative vapour density | 2.97 - (Air = 1.0) |



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## SECTION 10: Stability and reactivity

**10.1 Reactivity**
No data available

**10.2 Chemical stability**
Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**
Vapours may form explosive mixture with air.

**10.4 Conditions to avoid**
Heat, flames and sparks.

**10.5 Incompatible materials**
Oxidizing agents, Strong bases

**10.6 Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

## SECTION 11: Toxicological information

**11.1 Information on toxicological effects**

**Acute toxicity**
LD50 Oral - Rat - male and female - 2,900 mg/kg
(OECD Test Guideline 401)
Inhalation: Irritating to respiratory system.
LD50 Dermal - Rabbit - male - 16,200 mg/kg
(OECD Test Guideline 402)

**Skin corrosion/irritation**

**Serious eye damage/eye irritation**
Eyes - Rat
Result: Eye irritation
(OECD Test Guideline 405)

**Respiratory or skin sensitisation**

**Germ cell mutagenicity**

**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 on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

**Specific target organ toxicity - single exposure**
May cause respiratory irritation. - Respiratory system
May cause drowsiness or dizziness. - Central nervous system



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**Specific target organ toxicity - repeated exposure**

**Aspiration hazard**

**Additional Information**
RTECS: SA8050000

## SECTION 12: Ecological information

### 12.1 Toxicity

| | |
|---|---|
| Toxicity to fish | flow-through test LC50 - Pimephales promelas (fathead minnow) - 1,540 mg/l - 96 h<br>Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia (water flea) - > 500 mg/l - 48 h<br>Remarks: (ECHA) |
| Toxicity to algae | static test ErC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 72 h<br>Remarks: (ECHA) |
| Toxicity to bacteria | static test EC50 - Pseudomonas putida - ca. 10,000 mg/l - 17 h<br>Remarks: (ECHA) |

### 12.2 Persistence and degradability

| | |
|---|---|
| Biodegradability | Result: - Readily biodegradable. |
| Biochemical Oxygen Demand (BOD) | 1,310 mg/g |
| Chemical Oxygen Demand (COD) | 2,246 mg/g |

### 12.3 Bioaccumulative potential

### 12.4 Mobility in soil

### 12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**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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## SECTION 14: Transport information

### DOT (US)

UN number: 1156 Class: 3 Packing group: II
Proper shipping name: Diethyl ketone
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

### IMDG

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

### IATA

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

## SECTION 15: Regulatory information

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

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

| | CAS-No. | Revision Date |
|---|---|---|
| Diethyl ketone | 96-22-0 | 2007-03-01 |

### Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|---|---|---|
| Diethyl ketone | 96-22-0 | 2007-03-01 |

### New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|---|---|---|
| Diethyl ketone | 96-22-0 | 2007-03-01 |

### 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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## SECTION 16: Other information

### Further information

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