1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Acetone
Product Number: 650501
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 #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Irritant

Target Organs
Liver, Kidney

GHS Classification
Flammable liquids (Category 2)
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.
H316 Causes mild skin irritation.
H319 Causes serious eye irritation.
H336 May cause 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
Chronic Health Hazard: *
Flammability: 3  
Physical hazards: 0

NFPA Rating  
Health hazard: 2  
Fire: 3  
Reactivity Hazard: 0

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.  

3. COMPOSITION/INFORMATION ON INGREDIENTS  
Formula: \( \text{C}_3\text{H}_6\text{O} \)  
Molecular Weight: 58.08 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>67-64-1</td>
</tr>
<tr>
<td>EC-No.</td>
<td>200-662-2</td>
</tr>
<tr>
<td>Index-No.</td>
<td>606-001-00-8</td>
</tr>
</tbody>
</table>

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.

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**
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**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>TWA 500 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td>STEL 750 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye &amp; Upper Respiratory Tract irritation Central Nervous System impairment Hematologic effects Not classifiable as a human carcinogen</td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>750 ppm</td>
<td></td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,800 mg/m³</td>
<td></td>
<td>The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors.</td>
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<td>1,000 ppm</td>
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</tr>
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<td>TWA</td>
<td></td>
<td>1,000 ppm</td>
<td></td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,400 mg/m³</td>
<td></td>
<td>The value in mg/m³ is approximate.</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>250 ppm</td>
<td></td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>590 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 AXBEK (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.

Immersion protection
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: > 480 min
Material tested:Butoject® (Aldrich Z677647, Size M)

Splash protection
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: > 30 min
Material tested:Butoject® (Aldrich Z677647, Size M)

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.

Immersion protection
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: > 480 min
Material tested:Butoject® (Aldrich Z677647, Size M)

Splash protection
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: > 30 min
Material tested:Butoject® (Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 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
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form liquid, clear
Colour colourless

Safety data
pH no data available
Melting point/freezing point Melting point/range: -94 °C (-137 °F)
Boiling point 56 °C (133 °F) at 1,013 hPa (760 mmHg)
Flash point -17.0 °C (1.4 °F) - closed cup
Ignition temperature 465 °C (869 °F)
Autoignition temperature 465.0 °C (869.0 °F)
Lower explosion limit 2 % (V)
Upper explosion limit 13 % (V)
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>533.3 hPa (400.0 mmHg) at 39.5 °C (103.1 °F)</td>
</tr>
<tr>
<td></td>
<td>245.3 hPa (184.0 mmHg) at 20.0 °C (68.0 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>0.791 g/mL at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>completely miscible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: -0.24</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 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**
Bases, Oxidizing agents, Reducing agents, Acetone reacts violently with phosphorous oxychloride.

**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 - 5,800 mg/kg

**Inhalation LC50**
LC50 Inhalation - rat - 8 h - 50,100 mg/m3

**Dermal LD50**
LD50 Dermal - guinea pig - 7,426 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 - Eye irritation - 24 h

**Respiratory or skin sensitization**
Chronic exposure may cause dermatitis.

**Germ cell mutagenicity**
no data available

**Carcinogenicity**
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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 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 drowsiness or dizziness.

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. Vapours may cause drowsiness and dizziness.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: AL3150000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 5,540.00 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 13,500.00 mg/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: 1090  Class: 3  
Packing group: II
Proper shipping name: Acetone
Reportable Quantity (RQ): 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG  
UN number: 1090  Class: 3  
Packing group: II
EMS-No: F-E, S-D
Proper shipping name: ACETONE
Marine pollutant: No

IATA  
UN number: 1090  Class: 3  
Packing group: II
Proper shipping name: Acetone

15. REGULATORY INFORMATION

OSHA Hazards  
Flammable liquid, Target Organ Effect, 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, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
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<tr>
<td>Acetone</td>
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<td>2007-03-01</td>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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<tr>
<td>Acetone</td>
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<td>2007-03-01</td>
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</tbody>
</table>
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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