

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Cyclohexanol

Product Number : 105899

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 both supplier and manufacturer) : (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., Harmful by skin absorption., Irritant

##### Other hazards which do not result in classification

May form explosive peroxides.

##### GHS Classification

Flammable liquids (Category 4)  
Acute toxicity, Oral (Category 4)  
Acute toxicity, Inhalation (Category 4)  
Acute toxicity, Dermal (Category 4)  
Skin irritation (Category 2)  
Eye irritation (Category 2A)  
Specific target organ toxicity - single exposure (Category 3)  
Acute aquatic toxicity (Category 3)

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

Pictogram



Signal word

Warning

Hazard statement(s)

|             |  |
|-------------|--|
| H227        | Combustible liquid                           |
| H302 + H312 | Harmful if swallowed or in contact with skin |
| H315        | Causes skin irritation.                      |
| H319        | Causes serious eye irritation.               |
| H332        | Harmful if inhaled.                          |
| H335        | May cause respiratory irritation.            |
| H402        | Harmful to aquatic life.                     |

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P280  
P305 + P351 + P338

Wear protective gloves/ protective clothing.  
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: 2  
Physical hazards: 0

#### NFPA Rating

Health hazard: 2  
Fire: 2  
Reactivity Hazard: 0

---

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C<sub>6</sub>H<sub>12</sub>O  
Molecular Weight : 100.16 g/mol

| Component              | Concentration |
|------------------------|---------------|
| <b>Cyclohexanol</b>    |               |
| CAS-No. 108-93-0       | <= 100 %      |
| EC-No. 203-630-6       |               |
| Index-No. 603-009-00-3 |               |

---

### 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 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. Discharge into the environment must be avoided.

### 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). Keep in suitable, closed containers for disposal.

---

## 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.

hygroscopic

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

| Components   | CAS-No.   | Value | Control parameters  | Basis  |
|--------------|---|-------|---------------------|--|
| Cyclohexanol | 108-93-0  | TWA   | 50 ppm              | USA. ACGIH Threshold Limit Values (TLV)  |
| Remarks      | Central Nervous System impairment Eye irritation Danger of cutaneous absorption |       |                     |  |
|              |   | TWA   | 50 ppm<br>200 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |
|              | Skin notation   |       |                     |  |
|              |   | TWA   | 50 ppm<br>200 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|              | The value in mg/m3 is approximate.  |       |                     |  |
|              |   | TWA   | 50 ppm<br>200 mg/m3 | USA. NIOSH Recommended Exposure Limits   |
|              | Potential for dermal absorption   |       |                     |  |

### 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm  
Break through time: 480 min

Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 60 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, 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

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

Complete suit protecting against chemicals, 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            |
| Colour | no data available |

### Safety data

|  |   |
|--|---|
| pH                                     | 6.5 at 40 g/l at 20 °C (68 °F)                      |
| Melting point/freezing point           | Melting point/range: 20 - 22 °C (68 - 72 °F) - lit. |
| Boiling point                          | 160 - 161 °C (320 - 322 °F) - lit.                  |
| Flash point                            | 68 °C (154 °F) - closed cup                         |
| Ignition temperature                   | 300 °C (572 °F)                                     |
| Auto-ignition temperature              | no data available                                   |
| Lower explosion limit                  | 1.25 %(V)   |
| Upper explosion limit                  | 12.25 %(V)  |
| Vapour pressure                        | 1.31 hPa (0.98 mmHg) at 25 °C (77 °F)               |
| Density                                | 0.948 g/cm <sup>3</sup> at 25 °C (77 °F)            |
| Water solubility                       | no data available                                   |
| Partition coefficient: n-octanol/water | log Pow: 1.25 at 25 °C (77 °F)                      |
| Relative vapour density                | 4.01  |
| 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**

no data available

**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 - 1,400 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Other changes. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

**Inhalation LC50****Dermal LD50**

LD50 Dermal - rabbit - > 1,000 mg/kg

**Other information on acute toxicity** no data available**Skin corrosion/irritation**

Skin - rabbit - Skin irritation

**Serious eye damage/eye irritation**

Eyes - rabbit - Moderate eye irritation

**Respiratory or skin**

**sensitisation** no data available

**Germ cell mutagenicity**

Genotoxicity in vitro - Human - leukocyte  
Cytogenetic analysis

Genotoxicity in vitro - Mammal - lymphocyte  
DNA damage

**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**

Reproductive toxicity - rat - Subcutaneous

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands.

Reproductive toxicity - Gerbil - Subcutaneous

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands.

no data available

#### **Teratogenicity**

no data available

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

May cause respiratory irritation.

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

no data available

#### **Aspiration hazard**

no data available

#### **Signs and Symptoms of Exposure**

prolonged or repeated exposure can cause:, Headache, Nausea, Tremors, Incoordination., burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Vomiting, 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: GV7875000

---

## **12. ECOLOGICAL INFORMATION**

### **Toxicity**

|   |   |
|---|---|
| Toxicity to fish                                    | LC50 - Pimephales promelas (fathead minnow) - 705 mg/l - 96 h   |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - > 500 mg/l - 48 h           |
| Toxicity to algae                                   | EC50 - Desmodesmus subspicatus (green algae) - 29.2 mg/l - 72 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**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

no data available

---

## **13. DISPOSAL CONSIDERATIONS**

### **Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. 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)**

NA-Number: 1993 Class: CBL

Packing group: III

Proper shipping name: Combustible liquid, n.o.s. (Cyclohexanol)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

---

**15. REGULATORY INFORMATION**

**OSHA Hazards**

Combustible Liquid, Target Organ Effect, Harmful by ingestion., Harmful 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**

The following components are subject to reporting levels established by SARA Title III, Section 313:

|              | CAS-No.  | Revision Date |
|--------------|----------|---------------|
| Cyclohexanol | 108-93-0 | 1993-04-24    |

**SARA 311/312 Hazards**

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

|              | CAS-No.  | Revision Date |
|--------------|----------|---------------|
| Cyclohexanol | 108-93-0 | 1993-04-24    |

**Pennsylvania Right To Know Components**

|              | CAS-No.  | Revision Date |
|--------------|----------|---------------|
| Cyclohexanol | 108-93-0 | 1993-04-24    |

**New Jersey Right To Know Components**

|              | CAS-No.  | Revision Date |
|--------------|----------|---------------|
| Cyclohexanol | 108-93-0 | 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**

Copyright 2013 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. 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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.