

# **MSDS – MATERIAL SAFETY DATA SHEET**

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## **CYCLOHEXANOL**

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### **1. Product Identification**

**Synonyms:** Cyclohexyl alcohol; Hexalin; Hydralin; Hexahydrophenol;  
Hydroxycyclohexanol

**CAS No.:** 108-93-0

**Molecular Weight:** 100.16

**Chemical Formula:** C<sub>6</sub>H<sub>11</sub>OH

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### **2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent	Hazardous
Cyclohexanol	108-93-0	100%	Yes

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### **3. Hazards Identification**

#### **Emergency Overview**

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**WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. MAY AFFECT LIVER AND KIDNEYS. COMBUSTIBLE LIQUID AND VAPOR.**

**SAFETY DATA Ratings (Provided here for your convenience)**

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Health Rating: 2 - Moderate (Life)

Flammability Rating: 2 - Moderate

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD;  
PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

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**Potential Health Effects**

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**Inhalation:**

Vapors can be irritating. Can cause nausea and tremors. High concentrations can have a narcotic effect.

**Ingestion:**

Ingestion causes vomiting and gagging. Large doses may cause nervous depression without convulsions.

**Skin Contact:**

Can defat tissues similar to gasoline. Can cause mild irritation.

**Eye Contact:**

Vapors can irritate the eyes. Splashes can cause severe irritation and pain.

**Chronic Exposure:**

Repeated or prolonged skin contact may cause dermatitis. Based on animal studies, may cause liver, kidney and vascular injury.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

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## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Ingestion:**

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin Contact:**

Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately. Do not use oily drops or ointment.

**Note to Physician:**

Monitor respiratory status, airway, kidney, liver, and cardiac function. Diagnostic test: Cyclohexanol in urine. Treat supportively.

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## 5. Fire Fighting Measures

**Fire:**

Flash point: 63C (145F) CC

Autoignition temperature: 300C (572F)

Combustible. Fire hazard when exposed to heat or flame.

**Explosion:**

Above the flash point, explosive vapor-air mixtures may be formed.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

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## 7. Handling and Storage

Protect against physical damage. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet. Separate from oxidizing materials. Storage and use areas should be No Smoking areas. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL):  
50 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):  
50 ppm (TWA) skin

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded and engineering controls are not feasible, a half-face organic vapor respirator may be worn for up to ten times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A particulate (NIOSH type N95 or better) prefilter should be used for the particulate.

### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### **Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

### **Appearance:**

Clear, colorless liquid to hygroscopic crystals.

### **Odor:**

Camphor / Menthol odor

### **Solubility:**

4 g/100 gm water @ 20C (68F)

### **Specific Gravity:**

0.96

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

100

**Boiling Point:**

161C (322F)

**Melting Point:**

25C (77F)

**Vapor Density (Air=1):**

3.5

**Vapor Pressure (mm Hg):**

0.975 @ 20C (68F)

**Evaporation Rate (BuAc=1):**

0.08

## 10. Stability and Reactivity

**Stability:**

Stable at room temperature in sealed containers. Heat will contribute to instability.

Hygroscopic.

**Hazardous Decomposition Products:**

Carbon dioxide and carbon monoxide may form when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizers, nitric acid, chromium trioxide, and hydrogen peroxide.

**Conditions to Avoid:**

Heat, flame, ignition sources, temperatures below 77F and incompatibles.

## 11. Toxicological Information

LD50 Oral rat: 2060 mg/kg; Irritation: Skin,open, rabbit: 14600 ug/24H Mild; Eye, rabbit: 2 mg Severe; Investigated as a mutagen and reproductive effector.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Cyclohexanol (108-93-0)	No	No	None

## 12. Ecological Information

### Environmental Fate:

When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life of less than 1 day. This material has a log octanol-water partition coefficient of less than 3.0. When released to water, this material is expected to quickly evaporate. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to have a half-life of less than 1 day. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals.

### Environmental Toxicity:

The LC50/96-hour values for fish are over 100 mg/l. This material is not expected to be toxic to aquatic life.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

Not regulated.

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## 15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
Ingredient          TSCA  EC    Japan  Australia
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Cyclohexanol (108-93-0)  Yes  Yes   Yes    Yes
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-----\Chemical Inventory Status - Part 2\-----
Ingredient          Korea  DSL   NDSL  Phil.
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Cyclohexanol (108-93-0)  Yes   Yes   No    Yes
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-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Cyclohexanol (108-93-0)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Cyclohexanol (108-93-0)	No	No	Yes

Chemical Weapons Convention: No TSCA 12(b): Yes CDTA: No  
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No  
 Reactivity: No (Pure / Liquid)

**WARNING:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: 1 Flammability: 2 Reactivity: 0

**Label Hazard Warning:**

WARNING! HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. MAY AFFECT LIVER AND KIDNEYS. COMBUSTIBLE LIQUID AND VAPOR.

**Label Precautions:**

- Keep away from heat and flame.
- Avoid breathing vapor or mist.
- Keep container closed.
- Use with adequate ventilation.
- Avoid prolonged or repeated contact with skin.
- Wash thoroughly after handling.

**Label First Aid:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Flush skin with soap or mild detergent and water for at least 15 minutes. Wash contaminated clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. In all cases call a physician.

**Product Use:**  
Laboratory Reagent.

**Revision Information:** No Changes.

**Disclaimer:**

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