

Material Safety Data Sheet

Cyclohexanol

ACC# 00499

Section 1 - Chemical Product and Company Identification

MSDS Name: Cyclohexanol

Catalog Numbers: AC147680000, AC147680010, AC147680025, AC147680050, AC147680200, AC147685000, C558-500

Synonyms: Adronal; Cyclohexyl alcohol; Hexalin; Hexahydrophenol; Hydroxycyclohexane.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
108-93-0	Cyclohexanol	98	203-630-6

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless or slight yellow solid or liquid. Flash Point: 68 deg C.

Warning! Causes eye, skin, and respiratory tract irritation. May be harmful if swallowed, inhaled, or absorbed through the skin. May cause central nervous system depression. Material is a solid at room temperature that melts upon moderate heating into a combustible liquid with a flash point below 200°F(93.3°C). Hygroscopic (absorbs moisture from the air).

Target Organs: Central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Instilled into the eye of the rabbit, moderately severe

irritation and corneal injury, which was reversible, occurred. (Doc of TLV)

Skin: Causes skin irritation. If absorbed, may cause central nervous system effects. In a 48-hour closed patch test using 4% cyclohexanol in petrolatum, there was evidence of erythema or edema in human subjects. Dermal toxicity data from animals indicate that a Skin notation is appropriate to minimize the potential for skin irritation as well as dermal absorption leading to central nervous system effects. (Doc of TLV)

Ingestion: May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged exposure may cause non-specific nervous system effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Material is a solid at room temperature that melts upon moderate heating into a combustible liquid with a flash point below 200°F(93.3°C).

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

Flash Point: 68 deg C (154.40 deg F)

Autoignition Temperature: 300 deg C (572.00 deg F)

Explosion Limits, Lower:2.4% by vol

Upper: N/A

NFPA Rating: (estimated) Health: 1; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep away from heat and flame.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Cyclohexanol	50 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	50 ppm TWA; 200 mg/m ³ TWA 400 ppm IDLH	50 ppm TWA; 200 mg/m ³ TWA

OSHA Vacated PELs: Cyclohexanol: 50 ppm TWA; 200 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid or liquid
Appearance: colorless or slight yellow
Odor: camphor or menthol odor.
pH: Not available.
Vapor Pressure: 1 mm Hg @ 20 deg C
Vapor Density: 3.46 (air=1)
Evaporation Rate:0.08 (n-butyl acetate=1)
Viscosity: 4.6 mPa @ 25 deg C
Boiling Point: 161 deg C @ 760 mmHg
Freezing/Melting Point:23 deg C
Decomposition Temperature:Not available.
Solubility: 3.6g/100g @ 20°C
Specific Gravity/Density:.96 g/cm³
Molecular Formula:C₆H₁₂O
Molecular Weight:100.16

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, moisture, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 108-93-0: GV7875000
LD50/LC50:
CAS# 108-93-0:
Draize test, rabbit, eye: 100 uL/24H Moderate;
Draize test, rabbit, eye: 100 uL/24H Mild;

Draize test, rabbit, eye: 10 uL Moderate;
Draize test, rabbit, skin: 500 uL/24H Moderate;
Draize test, rabbit, skin: 500 uL/24H Mild;
Oral, rat: LD50 = 1400 mg/kg;

Carcinogenicity:

CAS# 108-93-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: See actual entry in RTECS for complete information.

Mutagenicity: See actual entry in RTECS for complete information.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: Will not bioconcentrate, highly mobile in soil.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not regulated as a hazardous material	No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 108-93-0 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

CAS# 108-93-0: 40 CFR 799.5115

Section 12b

CAS# 108-93-0: Section 4, 1 % de minimus concentration

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 108-93-0: immediate, delayed, fire.

Section 313

This material contains Cyclohexanol (CAS# 108-93-0, 98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 108-93-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

- R 20/22 Harmful by inhalation and if swallowed.
- R 37/38 Irritating to respiratory system and skin.

Safety Phrases:

- S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 108-93-0: 1

Canada - DSL/NDSL

CAS# 108-93-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 108-93-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/19/1997

Revision #10 Date: 2/08/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.