

SAFETY DATA SHEET

Preparation Date: 8/29/2018

Revision Date: 8/29/2018

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: C1460
Product Name: CYCLOHEXANOL, REAGENT

Other means of identification

Synonyms: Cyclohexyl alcohol; Hexahydrophenol; Hydroxycyclohexane
CAS #: 108-93-0
RTECS # GV7875000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 4

Label elements

Warning

Hazard statements

Harmful if swallowed
 Harmful if inhaled
 Causes skin irritation
 Causes serious eye irritation

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May cause respiratory irritation
Combustible liquid



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Harmful to aquatic life with long lasting effects

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep cool

Precautionary Statements - Response

Specific treatment (see .? on this label)

In case of fire: Use CO₂, dry chemical, or foam to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Cyclohexanol	108-93-0	100

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact:

Wash off immediately with soap and plenty of water. Remove all contaminated clothes and

shoes. Get medical attention.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Moderately irritating to the skin
Moderately irritating to the eyes
Irritating to respiratory system
May cause nausea, headache, vomiting
May cause drowsiness or dizziness
May cause seizures
May affect the liver
It may affect the kidneys
Prolonged or repeated contact may cause drying and cracking of the skin

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Water spray. Alcohol-resistant foam.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Monoxide, Carbon Dioxide.

Specific hazards: Combustible material. May be ignited by heat, sparks or flames. Container explosion may occur under fire conditions or when heated. Vapors may form explosive mixtures with air. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks).

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Remove all sources of ignition. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Should not be released into the environment.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Hygroscopic. Protect from moisture. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents
Strong acids
Nitric acid
Strong bases
aliphatic amines
isocyanates

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Cyclohexanol	108-93-0	50 ppm TWA 200 mg/m ³ TWA	50 ppm TWA 200 mg/m ³ TWA	50 ppm TWA	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Cyclohexanol	108-93-0	50 ppm TWA 205 mg/m ³ TWA	50 ppm TWA	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Cyclohexanol	108-93-0	50 ppm TWA 206 mg/m ³ TWA	50 ppm TWA 200 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Long sleeved clothing
Chemical resistant apron
Gloves
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: No information available.	Color: Colorless.
Odor: Camphor-like.	Taste No information available.	Formula: CH ₂ (CH ₂) ₄ CHOH
Molecular/Formula weight (g/mole): 100.16	Flammability: Combustible liquid	Flashpoint (°C/°F): 62.8 °C/145 °F
Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): 300 °C/572 °F	Lower Explosion Limit (%): 2.7
Upper Explosion Limit (%): 12	Melting point/range(°C/°F): 25.93 °C/78.67 °F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F):		

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161.84 °C/323.3 °F

Bulk density:
No information available

Density (g/cm³):
No information available

Specific gravity:
0.9624

pH:
No information available

Vapor pressure @ 20°C (kPa):
0.0876 @ 25 deg. C

Evaporation rate:
No information available

Vapor density:
3.5

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
log Kow = 1.23

Viscosity:
No information available

Miscibility:
Miscible with Benzene
Miscible with Ethyl Acetate
Miscible with Linseed Oils

Solubility:
Soluble in Ethanol
Soluble in Ether
Soluble in Acetone
Slightly soluble in chloroform
Very slightly soluble in water

10. STABILITY AND REACTIVITY

Reactivity

No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials. Exposure to moisture. Exposure to moist air.

Incompatible Materials: Oxidizing agents
Strong acids
Nitric acid
Strong bases
aliphatic amines
isocyanates

Hazardous decomposition products: Carbon oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Eyes. Ingestion. Inhalation. Skin.

Acute Toxicity

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The following values are calculated based on chapter 3.1 of the GHS document
Component Information

Cyclohexanol	
CAS-No.	108-93-0

LD50/oral/rat = 2.06 g/kg Oral LD50 Rat; 1400 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rabbit = 501 - 794 mg/kg Dermal LD50

LD50/dermal/rat = No information available

LC50/inhalation/rat = 3.6 mg/L Inhalation LC50 Rat 4 h

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 1400 mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = 501 mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = >3.63 mg/l (4-hr)

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation. Moderately irritating to the skin. May be absorbed through the skin in harmful amounts. If absorbed through skin it may cause systemic effects.

Eye Contact: Causes serious eye irritation. Moderately irritating to the eyes.

Inhalation Harmful by inhalation. Irritating to respiratory system. May cause dizziness and headache. May cause nausea, vomiting.

Ingestion Harmful if swallowed. May cause gastritis. May cause diarrhea. May affect behavior/central nervous system (somnolence). May affect behavior/central nervous system (convulsions/seizures).

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged skin contact may cause drying and cracking of the skin. Chronic exposure may affect the liver and kidneys.

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Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Cyclohexanol	108-93-0	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: May impair fertility
May cause harm to the unborn child

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Cyclohexanol - 108-93-0

Freshwater Algae Data: 29.2 mg/L EC50 *Desmodesmus subspicatus* 72 h 29 mg/L EC50 *Desmodesmus subspicatus* 96 h

Freshwater Fish Species Data: 704 mg/L LC50 *Pimephales promelas* 96 h flow-through 1 1033 mg/L LC50 *Pimephales promelas* 96 h static 1 1100 mg/L LC50 *Lepomis macrochirus* 96 h static 1

Water Flea Data: 500 mg/L EC50 *Daphnia magna* Straus 24 h 578 mg/L EC50 *Daphnia magna* 24 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

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Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Cyclohexanol	108-93-0	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class: No information available
Packing group: No information available
Emergency Response Guide Number: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: No Information available
Symbol(s): No information available
Description: No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No Information available
Description: No information available

ADR

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available

IMO / IMDG

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No information available

RID

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

ICAO

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
ERG Code: No information available
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Cyclohexanol</i>	108-93-0	Present ACTIV E	Present KE-09187	Present	Present (3)-2318	Present	Present	Present 203-630-6

U.S. Regulations

Cyclohexanol

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0569
New Jersey (EHS) List: 0569 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Present
Minnesota - Hazardous Substance List: Present
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Cyclohexanol</i>	108-93-0	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Cyclohexanol</i>	108-93-0	None	None	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules	TSCA 8(d) -Health and Safety Reporting

		(SNURS)	
Cyclohexanol	108-93-0	Not Applicable	08/04/199506/30/1998

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

Component
Cyclohexanol
108-93-0 (100)

WHMIS 2015 Hazard Classification
Flammable liquids - Category 4: H227 Combustible liquid.;
Serious Eye Damage/Eye Irritation - Category 2A: H319 Causes serious eye irritation.; Specific target organ toxicity - Single exposure - Category 3: H335 May cause respiratory irritation.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

Components	WHMIS Ingredient Disclosure List -
Cyclohexanol	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Cyclohexanol	108-93-0	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Cyclohexanol	108-93-0	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Cyclohexanol	108-93-0	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Cyclohexanol	108-93-0	Acute toxicity - Oral - Acute Tox. 4: H302 Harmful if swallowed. (Minimum classification); Acute toxicity - Inhalation - Acute Tox. 4: H332 Harmful if inhaled. (Minimum classification); Skin corrosion/irritation - Skin Irrit. 2: H315 Causes skin irritation.; Specific target organ toxicity - Single exposure - STOT SE 3: H335 May cause respiratory irritation.603-009-00-3

EU - CLP (1272/2008)

R-phrase(s)

R20/22 - Harmful by inhalation and if swallowed.
R37/38 - Irritating to respiratory system and skin.

S -phrase(s)

S 2 - Keep out of the reach of children.
S24/25 - Avoid contact with skin and eyes.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Cyclohexanol	108-93-0	Xn; R20/22 Xi; R37/38	No information	S2 S24/25

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.

Xi - Irritant.

Xn



Xi



16. OTHER INFORMATION

Preparation Date: 8/29/2018
Revision Date: 8/29/2018
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet