

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

1 Identification of substance:**Product details:****Product name:** Cyclohexanol**Stock number:**

A17576

L03653

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Cyclohexanol (CAS# 108-93-0), 100%

Identification number(s):**EINECS Number:** 203-630-6**Index number:** 603-009-00-3**3 Hazards identification****Hazard description:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 20/22 Harmful by inhalation and if swallowed.

R 37/38 Irritating to respiratory system and skin.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1

Flammability = 1

Reactivity = 1

GHS label elements**Danger**

3.1/3 - Toxic if swallowed.

3.1/4 - Harmful if inhaled.

3.2/2 - Causes skin irritation.

3.8/3 - May cause respiratory irritation.

Warning

2.6/4 - Combustible liquid.

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

Rinse mouth.

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If skin irritation occurs: Get medical advice/attention.
 Take off contaminated clothing and wash before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.

Storage:

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

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
 Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
 Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.
 Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.
 Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.
 Store in cool, dry place in tightly closed containers.
 Ensure good ventilation at the workplace.

Information about protection against explosions and fires: Keep ignition sources away.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.

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8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Cyclohexanol

	ppm
ACGIH TLV	50 (skin)
Belgium TWA	50 (skin)
Denmark TWA	50
Finland TWA	50; 75-STEL
France TWA	50; 75-STEL
Germany TWA	50
Hungary TWA	20 mg/m ³ ; 40 mg/m ³ -STEL
Ireland TWA	50
Netherlands TWA	0.25
Poland TWA	20 mg/m ³
Russia TWA	25
Sweden TWA	50; 75-STEL
Switzerland TWA	50; 100-STEL
United Kingdom TWA	50
USA PEL	0

Components with limit values that require monitoring at the workplace:

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection:

Safety glasses

Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Liquid
Color:	Colorless
Odor:	Camphor-like

Change in condition

Melting point/Melting range:	22-24°C (72-75°F)
Boiling point/Boiling range:	160-161°C (320-322°F)
Sublimation temperature / start:	Not determined

Flash point: 68°C (154°F)

Ignition temperature: 300°C (572°F)

Decomposition temperature: Not determined

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower:	1.25 Vol %
Upper:	12.25 Vol %

Vapor pressure: Not determined

Density at 20°C (68°F): 0.963 g/cm³

**Solubility in / Miscibility with
Water at 20°C (68°F):** 36 g/l

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10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents**Dangerous reactions** No dangerous reactions known**Dangerous products of decomposition:** Carbon monoxide and carbon dioxide**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	1400 mg/kg (rat)
	LDLo	2200 mg/kg (rabbit)
Dermal	LDLo	794 mg/kg (rabbit)
Irritation of skin	moderate	500 µL/24H (rabbit)
Irritation of eyes	moderate	100 µL/24H (rabbit)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Other information (about experimental toxicology):**

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed with humans.

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Prolonged exposure to cyclohexanol can cause headache, tremors, nausea and incoordination.

May be absorbed through the skin. Causes reproductive effects in rodents and mutagenic effects in humans.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation** Consult state, local or national regulations to ensure proper disposal.**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport information**

Not a hazardous material for transportation.

DOT regulations:**Hazard class:** None**Land transport ADR/RID (cross-border)****ADR/RID class:** None**Maritime transport IMDG:****IMDG Class:** None**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** None**Transport/Additional information:** Not dangerous according to the above specifications.

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15 Regulations**Product related hazard informations:****Hazard symbols:**

Xn Harmful

Risk phrases:

20/22 Harmful by inhalation and if swallowed.

37/38 Irritating to respiratory system and skin.

Safety phrases:

24/25 Avoid contact with skin and eyes.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721. This product is being sold for research and development use only for the significant new use listed.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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