

**Cyclohexane****BDH1111**

Version 1.3

Revision Date 03/25/2015

Print Date 05/08/2015

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Cyclohexane

MSDS Number : 000000011713

Product Use Description : Solvent

Manufactured for : VWR International LLC  
Radnor Corporate Center  
Building One  
Suite 200  
100 Matsonford Road  
Radnor PA 19087

For more information call : (Monday-Friday, 8:00am-5:00pm)  
1-800-932-5000

In case of emergency call : (24 hours/day, 7 days/week)  
1-800-424-9300 (USA Only)  
**For Transportation Emergencies:**  
1-800-424-9300 (CHEMTREC - Domestic)  
1-613-996-6666 (CANUTEC - Canada)

**SECTION 2. HAZARDS IDENTIFICATION****Emergency Overview**

Form : liquid, clear

Color : colourless

Odor : mild sweet

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**Classification of the substance or mixture**

Classification of the substance or mixture : Flammable liquids, Category 2  
Skin irritation, Category 2  
Specific target organ toxicity - single exposure, Category 3,  
Central nervous system  
Aspiration hazard, Category 1

**GHS Label elements, including precautionary statements**

Symbol(s)



Signal word

: Danger

Hazard statements

: Highly flammable liquid and vapour.  
May be fatal if swallowed and enters airways.  
Causes skin irritation.  
May cause drowsiness and dizziness.

Precautionary statements

: **Prevention:**  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/ eye protection/ face protection.**Response:**

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

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove victim to fresh air and keep at rest in a

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position comfortable for breathing.  
Call a POISON CENTER or doctor/ physician if you feel unwell.  
Do NOT induce vomiting.  
If skin irritation occurs: Get medical advice/ attention.  
Take off contaminated clothing and wash before reuse.  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**

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

**Disposal:**

Dispose of contents/container in accordance with local, state & federal regulations.

**Carcinogenicity**

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, IARC, or OSHA.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>6</sub>H<sub>12</sub>  
Chemical nature : Substance

Chemical Name	CAS-No.	Concentration
Cyclohexane	110-82-7	100.00 %

**SECTION 4. FIRST AID MEASURES**

Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

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- Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.
- Ingestion : Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Call a physician.

#### Notes to physician

- Treatment : Treat symptomatically.

## SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Foam  
Cool closed containers exposed to fire with water spray.
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : Extremely flammable.  
Vapours may form explosive mixtures with air.  
Vapours are heavier than air and may spread along floors.  
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.  
In case of fire hazardous decomposition products may be produced such as:  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions : Wear personal protective equipment. Unprotected persons must be kept away.  
Immediately evacuate personnel to safe areas.  
Keep people away from and upwind of spill/leak.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Prevent product from entering drains.  
Discharge into the environment must be avoided.  
Do not flush into surface water or sanitary sewer system.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Methods for cleaning up : Ventilate the area.  
No sparking tools should be used.  
Use explosion-proof equipment.  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**SECTION 7. HANDLING AND STORAGE****Handling**

- Handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not swallow.  
Avoid breathing vapours, mist or gas.

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Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.  
Take precautionary measures against static discharges.  
Ensure all equipment is electrically grounded before beginning transfer operations.  
Use explosion-proof equipment.  
Keep product and empty container away from heat and sources of ignition.  
No sparking tools should be used.  
No smoking.

**Storage**

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids. Protect from physical damage.  
Keep containers tightly closed in a dry, cool and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep away from heat and sources of ignition.  
Keep away from direct sunlight.  
Store away from incompatible substances.  
Container hazardous when empty.  
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering measures : Use with local exhaust ventilation.  
Prevent vapour buildup by providing adequate ventilation during and after use.

Eye protection : Do not wear contact lenses.  
Wear as appropriate:  
Safety glasses with side-shields



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- If splashes are likely to occur, wear:  
Goggles or face shield, giving complete protection to eyes
- Hand protection : Solvent-resistant gloves  
Gloves must be inspected prior to use.  
Replace when worn.
- Skin and body protection : Wear as appropriate:  
Solvent-resistant apron  
Flame retardant antistatic protective clothing.  
If splashes are likely to occur, wear:  
Protective suit
- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.  
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.  
Use NIOSH approved respiratory protection.
- Hygiene measures : When using, do not eat, drink or smoke.  
Wash hands and face before breaks and immediately after handling the product.  
Keep working clothes separately.  
Remove and wash contaminated clothing before re-use.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and clothing.

#### Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Cyclohexane	110-82-7	TWA : time weighted average	(100 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
Cyclohexane	110-82-7	REL : Recommended exposure limit (REL):	1,050 mg/m3 (300 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards

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Cyclohexane	110-82-7	PEL : Permissible exposure limit	1,050 mg/m <sup>3</sup> (300 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Cyclohexane	110-82-7	TWA : time weighted average	1,050 mg/m <sup>3</sup> (300 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid, clear
Color	: colourless
Odor	: mild sweet
pH	: Note: Not applicable
Melting point/freezing point	: 6.54 °C
Boiling point/boiling range	: 80.72 °C
Flash point	: -4 °F (-20 °C) Method: closed cup
Evaporation rate	: 6 Method: Compared to Butyl acetate.
Lower explosion limit	: 1 %(V)



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Upper explosion limit	: 8.4 %(V)
Vapor pressure	: 104 hPa at 20 °C(68 °F) 129 hPa at 25 °C(77 °F)
Vapor density	: 2.9 Note: (Air = 1.0)
Density	: 0.78 g/cm <sup>3</sup> at 20 °C
Water solubility	: Note: insoluble
Ignition temperature	: 245 °C
Molecular weight	: 84.16 g/mol

**SECTION 10. STABILITY AND REACTIVITY**

Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Incompatible materials to avoid	: Strong oxidizing agents Acids
Hazardous decomposition	: In case of fire hazardous decomposition products may be

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products

produced such as:  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity	: LD50: > 5,000 mg/kg Species: Rat
Acute inhalation toxicity	: LC50: 32.88 mg/l Exposure time: 4 h Species: Rat
Acute dermal toxicity	: LD50: > 2,000 mg/kg Species: Rabbit
Skin irritation	: Species: Rabbit Result: Irritating to skin.
Eye irritation	: Species: Rabbit Result: slight irritation
Repeated dose toxicity	: Species: Rabbit Application Route: Inhalation Note: (786 ppm; 6 hours/day for 50 days; NOEL: 434 ppm) Based on experimental results, may cause adverse health effects on the following: Liver Kidney
Genotoxicity in vitro	: Test Method: Ames test Result: negative

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity effects

Toxicity to fish : flow-through test  
LC50: 4.53 mg/l  
Exposure time: 96 h  
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates : static test  
EC50: 0.9 - 3.78 mg/l  
Species: Daphnia magna (Water flea)

Toxicity to algae : EbC50: 3.4 mg/l  
Exposure time: 72 h  
Species: Pseudokirchneriella subcapitata (green algae)

### Further information on ecology

Additional ecological information : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Dispose of contents/ container in accordance with local, state, and federal regulations.

Contaminated packaging : Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1145  
Proper shipping name : CYCLOHEXANE

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Class	3
Packing group	II
Hazard Labels	3

**IATA**

UN/ID No.	: UN 1145
Description of the goods	: CYCLOHEXANE
Class	: 3
Packaging group	: II
Hazard Labels	: 3
Packing instruction (cargo aircraft)	: 364
Packing instruction (passenger aircraft)	: 353
Packing instruction (passenger aircraft)	: Y341

**IMDG**

UN/ID No.	: UN 1145
Description of the goods	: CYCLOHEXANE
Class	: 3
Packaging group	: II
Hazard Labels	: 3
EmS Number	: F-E, S-D
Marine pollutant	: no

## SECTION 15. REGULATORY INFORMATION

### Inventories

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL.



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Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

#### National regulatory information

US. EPA CERCLA Hazardous Substances (40 CFR 302) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 1000 lbs  
: Cyclohexane 110-82-7

**SARA 302 Components** : 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:  
: Cyclohexane 110-82-7

**SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

**CERCLA Reportable Quantity** : 1000 lbs

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**California Prop. 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Massachusetts RTK** : Cyclohexane 110-82-7

**New Jersey RTK** : Cyclohexane 110-82-7

**Pennsylvania RTK** : Cyclohexane 110-82-7

**WHMIS Classification** : B2: Flammable liquid  
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

## SECTION 16. OTHER INFORMATION

	<b>HMIS III</b>	<b>NFPA</b>
Health hazard	: 2*	1
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

\* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

### Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information

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and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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