

**Cyclohexane (BDH1111-19L, BDH1111-204L, BDH1111-4LG)****00000011713**

Version 1

Revision Date 06/20/2012

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**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Cyclohexane (BDH1111-19L, BDH1111-204L, BDH1111-4LG)

MSDS Number : 00000011713

Product Use Description : Solvent

Manufacturer : Honeywell  
1953 South Harvey Street  
Muskegon, MI 49442

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)  
1-613-966-6666 (CANUTEC - Canada)

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

Form : liquid, clear

Color : colourless

Odor : mild sweet

Hazard Summary : Extremely flammable. In use, may form flammable/explosive vapour-air mixture. Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if inhaled. Irritating to eyes, respiratory system and skin. May cause irritation of the gastrointestinal tract. Repeated exposure may cause skin dryness or cracking.

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**Potential Health Effects**

- Skin** : Irritating to skin.  
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
- Eyes** : Irritating to eyes.  
Causes itching, burning, redness and tearing.
- Ingestion** : Aspiration hazard if swallowed - can enter lungs and cause damage.  
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
- Inhalation** : Causes respiratory tract irritation.  
Causes headache, drowsiness or other effects to the central nervous system.  
Vapours may cause drowsiness and dizziness.  
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.  
High concentration of vapours may induce unconsciousness.
- Chronic Exposure** : Repeated and prolonged exposure to solvents may cause brain and nervous system damage.  
Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
- Aggravated Medical Condition** : Eye disorders  
Skin disorders  
Respiratory disorders  
Neurological disorders
- Target Organs** : Eyes  
Skin  
Respiratory system  
Central nervous system

**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>


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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.
- 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.



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In case of fire hazardous decomposition products may be produced such as:  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)

Special protective equipment : Wear self-contained breathing apparatus and protective suit for firefighters

### 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 vapors, mist or gas.  
Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Discharge into the environment must be avoided.  
Do not flush into surface water or sanitary sewer system.  
Prevent product from entering drains.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Methods for cleaning up : Ventilate the area.  
No sparking tools should be used.  
Use explosion-proof equipment.  
Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local 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.



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Advice on protection against fire and explosion : Avoid breathing vapors, mist or gas.  
Avoid contact with skin, eyes and clothing.

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 vapor buildup by providing adequate ventilation during and after use.

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



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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 vapors, 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

		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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		PEL : Permissible exposure limit	1,050 mg/m3 (300 ppm)	02 2006	OSHA_TRANS: US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
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		TWA : time weighted average	1,050 mg/m3 (300 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid, clear
Colour	: colourless
Odour	: 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)
Upper explosion limit	: 8.4 %(V)

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Vapour pressure	:	104 hPa at 20 °C(68 °F)
		129 hPa at 25 °C(77 °F)
Vapour 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**

Conditions to avoid	:	Heat, flames and sparks. Keep away from direct sunlight.
Materials to avoid	:	Strong oxidizing agents Acids
Hazardous decomposition products	:	In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO <sub>2</sub> )
Hazardous reactions	:	Hazardous polymerisation does not occur. Stable under recommended storage conditions.



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**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

**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)
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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 : Observe all Federal, State, and Local Environmental 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  
 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


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Description of the goods	:	CYCLOHEXANE
Class	:	3
Packaging group	:	II
Hazard Labels	:	3
EmS Number	:	F-E
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 list.
Japan. Kashin-Hou Law List	:	On the inventory, or in compliance with the inventory
Korea. Existing Chemicals Inventory (KECI)	:	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**

<b>SARA 302 Components</b>	:	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
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<b>SARA 313 Components</b>	:	The following components are subject to reporting levels established by SARA Title III, Section 313: Cyclohexane	110-82-7
<b>SARA 311/312 Hazards</b>	:	Fire Hazard Acute Health Hazard Chronic Health Hazard	
<b>CERCLA Reportable Quantity</b>	:	1000 lbs	
<b>California Prop. 65</b>	:	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.	
<b>Massachusetts RTK</b>	:	Cyclohexane	110-82-7
<b>New Jersey RTK</b>	:	Cyclohexane	110-82-7
<b>Pennsylvania RTK</b>	:	Cyclohexane	110-82-7
<b>WHMIS Classification</b>	:	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.



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**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information 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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Prepared by: Honeywell Performance Materials and Technologies Product Stewardship Group