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# MATERIAL SAFETY DATA SHEET

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## SECTION 1 CHEMICAL PRODUCT

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**SUBSTANCE:** Cyclopentane

**CHEMICAL FAMILY:** hydrocarbons, alicyclic

**CREATION DATE:** Dec. 01 2010

**REVISION DATE:** April 20 203

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## SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

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### 1. IDENTIFICATION

<b>Chemical Name:</b>	Cyclopentane
<b>Molecular Weight:</b>	70.14
<b>Chemical Family:</b>	Cycloaliphatic Hydrocarbon
<b>Formula:</b>	C <sub>5</sub> H <sub>10</sub>
<b>Synonyms:</b>	Not listed
<b>DOT Proper Shipping Name:</b>	Cyclopentane
<b>DOT Hazard Class:</b>	Flammable Liquid, Hazard Class 3, P.G. II
<b>DOT Identification Number:</b>	UN1146
<b>EC NUMBER (EINECS):</b>	206-016-6
<b>EC INDEX NUMBER:</b>	601-030-00-2
<b>PERCENTAGE:</b>	100.0
<b>CAS Number:</b>	CAS Number: 287-92-3

### 2. PHYSICAL AND CHEMICAL DATA

<b>Boiling Point, 760 mm Hg:</b>	49.3° C
<b>Freezing Point:</b>	-93.87° C
<b>Vapor Density (air=1):</b>	2.4
<b>Solubility in Water:</b>	Insoluble
<b>Specific Gravity (H<sub>2</sub>O=1):</b>	@ 20° C 0.745
<b>Stability:</b>	Stable
<b>Hazardous Polymerization:</b>	Not expected to occur
<b>Appearance and Odor:</b>	Clear, colorless liquid with a strong hydrocarbon odor
<b>Conditions to Avoid:</b>	Heat, sparks, open flame, open containers, and poor ventilation
<b>Materials to Avoid:</b>	Strong oxidizing agents
<b>Hazardous Decomposition</b>	Incomplete combustion can generate carbon

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**Products:** monoxide and other toxic vapors

### 3. FIRE AND EXPLOSION HAZARD DATA

**Flash Point :** -42° C

**Auto Ignition** 361° C

**Temperature:**

**Flammable Limits in Air** Lower Limit 1.4 Upper Limit:8.0

**% by Volume:**

**Unusual Fire and** Very volatile and extremely flammable

**Explosion Hazards:**

**Extinguishing Media:** Carbon dioxide, dry chemical, or foam

**Special Fire Fighting Procedures:** Water will not be effective in extinguishing a fire and may spread it, but a water spray can be used to cool fire-exposed containers. Wear full protective clothing and self-contained breathing apparatus. Heat will build pressure and may rupture closed storage containers.

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### SECTION 3 HAZARDS IDENTIFICATION

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**NFPA RATINGS (SCALE 0-4):** HEALTH=2 FIRE=3 REACTIVITY=0

**EMERGENCY OVERVIEW:**

**COLOR:** colorless

**PHYSICAL FORM:** liquid

**ODOR:** distinct odor

**MAJOR HEALTH HAZARDS:** respiratory tract irritation, skin irritation, eye irritation, central nervous system depression

**PHYSICAL HAZARDS:** Flammable liquid and vapor. Vapor may cause flash fire.



**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** irritation, headache, drowsiness, symptoms of drunkenness

**LONG TERM EXPOSURE:** no information on significant adverse effects

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** irritation

**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** irritation

**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**INGESTION:**

**SHORT TERM EXPOSURE:** nausea, headache, drowsiness, symptoms of drunkenness

**LONG TERM EXPOSURE:** no information on significant adverse effects

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**CARCINOGEN STATUS:****OSHA:** No**NTP:** No**IARC:** No

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**SECTION 4 FIRST AID MEASURES**

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**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**SKIN CONTACT:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**EYE CONTACT:** Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**INGESTION:** If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

**NOTE TO PHYSICIAN:** For ingestion, consider gastric lavage. Consider oxygen.

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**SECTION 5 FIRE FIGHTING MEASURES**

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**FIRE AND EXPLOSION HAZARDS:** Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive above flash point.

**EXTINGUISHING MEDIA:** regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

**LOWER FLAMMABLE LIMIT:** 1.4%

**AUTOIGNITION:** 682 F (361 C)

**FLAMMABILITY CLASS (OSHA):** IB

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**SECTION 6 ACCIDENTAL RELEASE MEASURES**

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**OCCUPATIONAL RELEASE:**

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources

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of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

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## SECTION 7 HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards.

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## SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

#### **CYCLOPENTANE:**

600 ppm (1720 mg/m<sup>3</sup>) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

600 ppm ACGIH TWA

600 ppm (1720 mg/m<sup>3</sup>) NIOSH recommended TWA 10 hour(s)

**VENTILATION:** Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** Wear appropriate chemical resistant gloves.

**RESPIRATOR:** Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

#### **For Unknown Concentrations or Immediately Dangerous to Life or Health -**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

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## SECTION 9 STABILITY AND REACTIVITY

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**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

**INCOMPATIBILITIES:** oxidizing materials

#### **HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: miscellaneous decomposition products

**POLYMERIZATION:** Will not polymerize.

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## SECTION 10 TOXICOLOGICAL INFORMATION

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### TOXICITY DATA:

106 gm/m<sup>3</sup> inhalation-rat LC<sub>50</sub>; 11400 mg/kg oral-rat LD<sub>50</sub>

### LOCAL EFFECTS:

Irritant: inhalation, skin, eye

### ACUTE TOXICITY LEVEL:

Slightly Toxic: inhalation, ingestion

**TARGET ORGANS:** central nervous system

**ADDITIONAL DATA:** Alcohol may enhance the toxic effects.

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## SECTION 11 ECOLOGICAL INFORMATION

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### ECOTOXICITY DATA:

**FISH TOXICITY:** 100000 ug/L 96 day(s) (Mortality) Coho salmon, silver salmon (*Oncorhynchus kisutch*)

**INVERTEBRATE TOXICITY:** 3390000 ug/L 48 week(s) EC<sub>50</sub> (Development) Pacific oyster (*Crassostrea gigas*)

**ALGAL TOXICITY:** 262000 ug/L 48 hour(s) (Population Growth) Cryptomonad (*Chilomonas paramecium*)

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## SECTION 12 DISPOSAL CONSIDERATIONS

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Dispose in accordance with all applicable regulations.

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## SECTION 13 TRANSPORT INFORMATION

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**PROPER SHIPPING NAME:** Cyclopentane

**ID NUMBER:** UN1146

**HAZARD CLASS OR DIVISION:** 3

**PACKING GROUP:** II

**LABELING REQUIREMENTS:** Flammable liquid

**DANGER/HAZARD SYMBOL:** see the picture



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