

**MATERIAL SAFETY DATA SHEET****ISO-PENTANE**

PRODUCT CODE NUMBER(S): 8010-1

**PRODUCT IDENTIFICATION**

**Chemical Name and Synonyms:** *iso-Pentane; 2-Methylbutane; Ethyldimethylmethane; iso-amylhydride*  
**Chemical Family:** *Aliphatic hydrocarbons/alkane*  
**Chemical Formula:**  $(CH_3)_2CH.CH_2.CH_3$   
**Product Use:** *Laboratory reagent*  
**Manufacturer's Name and Address:**  
*Caledon Laboratories Ltd.  
40 Armstrong Avenue  
Georgetown, Ontario L7G 4R9*  
**Telephone No:** (905) 877-0101  
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**HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>iso-Pentane</i>	<i>&gt;99</i>	<i>600 mg/m<sup>3</sup></i>	<i>78-78-4</i>

**PHYSICAL DATA**

**Physical State:** *Liquid*  
**Odour and Appearance:** *Colourless liquid, gasoline-like odour*  
**Odour Threshold (ppm):** *Not available*  
**Vapour Pressure (mm Hg):** *595 mm Hg @ 20°C*  
**Vapour Density (Air = 1):** *2.5*  
**Evaporation Rate:** *Not available*  
**Boiling Point (degrees C):** *30°C*  
**Freezing Point (degrees C):** *-160.5°C*  
**pH:** *Not available*  
**Specific Gravity:** *0.621 @ 20°C*  
**Coefficient of Water/Oil distribution:** *logP (oct)=3.2 to 3.3*

**SHIPPING DESCRIPTION**

**UN:** *1265*  
**T.D.G. Class:** *3*  
**Pkg. Group:** *I*

**REACTIVITY DATA**

**Chemical Stability:** *Normally stable*  
**Incompatibility with other substances:** *Increased risk of fire and explosion with strong oxidizing agents. Not corrosive to metals.*  
**Reactivity:** *Avoid heat, sparks, open flame, hot surfaces, oxidizing materials, generation of mist or vapour, and all incompatible materials.*  
**Hazardous Decomposition Products:** *Toxic fumes of CO, CO<sub>2</sub>*

**FIRE AND EXPLOSION DATA**

**Flammability:** *Extremely flammable liquid and vapour. Material readily ignites at room temperature. Vapours form explosive mixtures with air. Vapour is heavier than air and may travel considerable distance to source of ignition and flash back. Liquid can float on water and spread fire. Containers may explode in a fire.*  
**Extinguishing Media:** *CO<sub>2</sub>, dry chemical powder, alcohol-resistant foam. Water spray or fog may be used to cool containers, disperse vapours, dilute material and flush material away from fire, but will be ineffective for fighting fire. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (full face-piece, positive-pressure self-contained breathing apparatus) and clothing (full Bunker gear) sufficient to prevent inhalation of fumes or vapours and contact with skin and eyes. Containers may explode in heat of fire; withdraw immediately in case of rising sound from vent or discoloration of tank.*  
**Flash Point (Method Used):** *-51°C (CC)*  
**Autoignition Temperature:** *420°C*  
**Upper Flammable Limit (% by volume):** *7.6*  
**Lower Flammable Limit (% by volume):** *1.4*  
**Hazardous Combustion Products:** *CO, CO<sub>2</sub>*  
**Sensitivity to Impact:** *None identified*  
**Sensitivity to Static discharge:** *Mixtures of vapour and air at concentrations in the flammable range readily ignited by static discharge. Liquid has low electrical conductivity and will accumulate static charge by flow or agitation.*

**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:**

**LD<sub>50</sub>:** *Not available*  
**LC<sub>50</sub>:** *(mouse) 140,000 ppm/2h*

**Effects of Acute Exposure to Product:**

**Inhaled:** *Central nervous system depressant. High concentrations may cause dizziness, disorientation, headache, excitement, drowsiness, incoordination, hypersensitivity, tremors, hyperactivity, anesthesia, respiratory and cardiac effects, unconsciousness and death. In humans, no symptoms were observed after 10 min exposure to 5000 ppm, 20.8% solution. In tests with dogs, 120,000 ppm caused light anaesthesia, irregular heartbeat; 150,000 to 170,000 caused death.*

**In contact with skin:** *Brief contact is not irritating. Contact with liquid for 1 to 5 hours may cause defatting, drying, itching, redness, swelling and burning, all of which are reversible after contact is terminated.*

**In contact with eyes:** *May cause temporary irritation, including pain, inflammation of the iris, redness and tearing.*

**Ingested:** *May cause irritation, nausea, vomiting. Not a likely route of industrial exposure. However, aspiration of the liquid into the lungs during ingestion or vomiting may cause*

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severe lung irritation or damage, chemical pneumonitis, pulmonary edema and even death.

**Effects of Chronic Exposure to Product:**

**Carcinogenicity:** No specific information available. Not expected to be carcinogenic.

**Teratogenicity:** No human or animal information available

**Reproductive Effects:** No human or animal information available

**Mutagenicity:** Negative in Ames test. No human or animal information available

**Synergistic Products:** None identified

**PREVENTIVE MEASURES**

**Engineering Controls:** Non-sparking, grounded exhaust ventilation, separate from other ventilation systems.

**Respiratory Protection:** Up to 1200 ppm: NIOSH approved supplied-air respirator. Up to 1500 ppm: full face-piece supplied-air respirator, continuous-flow supplied-air respirator, or self-contained breathing apparatus. Higher or unknown concentrations, as in fire or spill conditions: positive-pressure, full face-piece self-contained breathing apparatus, or positive-pressure, full face-piece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus.

**Eye Protection:** Chemical safety goggles and/or face shield.

**Skin Protection:** Viton™, Silver Shield/4H™, polyethylene/ethylene vinyl alcohol gloves. Other protective clothing, sleeves, apron, coveralls, boots, sufficient to prevent contact.

**Other Personal Protective Equipment:** Safety shower and eye wash readily available in work area.

**Leak and Spill Procedure:** Evacuate area, and provide maximum ventilation. Eliminate all sources of ignition. Cleanup personnel must wear protective equipment and clothing sufficient to prevent inhalation of mists or vapours and contact with skin and eyes, and must be thoroughly trained in the handling of hazardous materials. Do not touch spilled material. Contain spill with activated carbon adsorbent or other inert material. Prevent from entering sewers or waterways. Collect contaminated adsorbent in labelled containers and hold for disposal. Contaminated adsorbent may have the same hazards as the product; treat with caution. Wash site of spill thoroughly with detergent and water.

**Waste Disposal:** Follow all federal, provincial, and local regulations.

**Handling Procedures and Equipment:** EXTREMELY FLAMMABLE, TOXIC. Workers must be thoroughly trained in the handling of hazardous materials and in the hazards of this material and its safe use, and must wear protective equipment and clothing sufficient to prevent inhalation of mists or vapours and contact with skin and eyes. Eliminate all ignition sources. Post "No Smoking" signs. Ground and bond drums, transfer vessels, hoses and piping, during liquid transfer. Ground clips must contact bare metal. Use spark-resistant tools and avoid "splash filling" of containers. Keep storage and work areas free of combustible or incompatible materials. Avoid generating mists or vapours. Avoid all contact and inhalation. Use the smallest possible amount in a well ventilated area. Keep aisles and exits clear of obstruction. Treat empty containers with caution; may contain hazardous residues. Keep away from any incompatible materials, particularly oxidizing agents. Do not return contaminated material to the original container.

**Storage Requirements:** Store in suitable, labelled containers, a cool, dry, well-ventilated area, out of direct sunlight. Keep tightly closed. Keep away from heat, sparks and flame. May develop pressure; refrigerate before opening (boiling point <30°C). Store away from any incompatible materials (e.g. oxidizing agents). Protect from damage and inspect frequently for signs of damage and/or leaking. Storage area should have raised sills to contain leaks and trenching to conduct them to a safe area.

**FIRST AID MEASURES****Specific Measures:**

**Eyes:** Immediately flush eyes with warm running water for five to ten (5-10) minutes, or until no trace of chemical remains, holding eyelids open while flushing. If irritation persists, obtain medical advice.

**Skin:** Remove contaminated clothing (including rings, watches, belts, and shoes). Immediately flush exposed area with large amounts of running water for five to ten (5-10) minutes or until no trace of chemical remains. If irritation persists, obtain medical advice.

**Inhalation:** IMMEDIATELY remove to fresh air (caution must be used by rescuers to avoid exposure to contaminating fumes). Give oxygen and get medical attention for any breathing difficulty. If breathing has stopped give artificial respiration. If breathing and pulse are absent, give CPR. IMMEDIATELY OBTAIN MEDICAL ATTENTION. Stay with casualty until medical assistance is reached.

**Ingestion:** Do NOT induce vomiting. DANGER OF ASPIRATION WITH EMESIS. If casualty is alert and not convulsing, rinse out mouth with water and give 1-2 glasses of water to drink to dilute material. Get medical attention. If spontaneous vomiting occurs have casualty lean forward with head down to avoid breathing in of vomitus.

**REFERENCES USED**

CCINFO disc: Cheminfo

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Royal Society of Chemistry: Chemical Safety Data Sheets, Vol. 5, 1992

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

**ADDITIONAL INFORMATION**

**Date Issued:** July 22, 1991

**Revision:** September 2009

**MSDS:** 8010-1

**Proposed WHMIS Designation:** B2

Prepared by: Caledon Laboratories Ltd. (905) 877-0101  
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