

**MATERIAL SAFETY DATA SHEET****OCTANE**

PRODUCT CODE NUMBER(S): 7700-1, 7701-2

**PRODUCT IDENTIFICATION**

**Chemical Name and Synonyms:** *Octane; n-Octane*  
**Chemical Family:** *Saturated aliphatic hydrocarbon*  
**Chemical Formula:**  $C_8H_{18}$   
**Product Use:** *Laboratory solvent*  
**Manufacturer's Name and Address:**  
*Caledon Laboratories Ltd.,  
40 Armstrong Avenue,  
Georgetown, Ontario L7G 4R9*  
**Telephone No:** (905) 877-0101  
**Fax No:** (905) 877-6666  
**Emergency Telephone No.:** CANUTEC (613) 996-6666

**HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Octane</i>	<i>&gt;95</i>	<i>300 ppm</i>	<i>111-65-9</i>

**PHYSICAL DATA**

**Physical State:** *Liquid*  
**Odour and Appearance:** *Colourless liquid, mild gasoline-like odour*  
**Odour Threshold (ppm):** *200 ppm (poor warning properties, odour threshold about the same as TLV)*  
**Vapour Pressure (mm Hg):** *11 mm Hg at 20°C*  
**Vapour Density (Air = 1):** *3.9*  
**Evaporation Rate:** *<1.0 (Ethyl ether = 1)*  
**Boiling Point (°C):** *126°C*  
**Freezing Point (°C):** *-56.7°C*  
**pH:** *Not available*  
**Specific Gravity:** *0.703 at 20°C*  
**Coefficient of Water/Oil distribution:** *LogP (oct)=5.18*

**SHIPPING DESCRIPTION**

**UN:** *1262*  
**T.D.G. Class:** *3*  
**Pkg. Group:** *II*

**REACTIVITY DATA**

**Chemical Stability:** *Stable under normal conditions of use and storage.*  
**Incompatibility with other substances:** *Avoid reducing materials. Strong oxidizers can increase risk of fire and explosion. Not corrosive to metals.*  
**Reactivity:** *Avoid heat, sparks, open flame, and all ignition sources. Flashback may occur along vapour trail. Avoid incompatible materials, generation of mist.*  
**Hazardous Decomposition Products:** *CO<sub>2</sub>, CO, various hydrocarbons*

**FIRE AND EXPLOSION DATA**

**Flammability:** *Flammable liquid and vapour. Can release vapours that form explosive mixtures with air at or above 13°C. Vapour is heavier than air and may travel considerable distance to source of ignition and flash back. Liquid can float on water to ignition source and flash back and/or spread fire. Liquid can accumulate static charge by flow or agitation.*

**Extinguishing Media:** *CO<sub>2</sub>, dry chemical, foam. Water may be ineffective for extinguishing, but as spray or fog may be used to cool containers and disperse vapours. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (NIOSH/OSHA approved self-contained breathing apparatus) and clothing (Bunker Gear) sufficient to prevent inhalation of mists or vapours, and contact with skin and eyes. Closed containers may rupture violently during fire; withdraw immediately in case of rising sound from vent or discoloration of tank.*

**Flash Point (Method Used):** *13°C (TCC)*

**Autoignition Temperature:** *206°C*

**Upper Flammable Limit (% by volume):** *6.5%*

**Lower Flammable Limit (% by volume):** *1.0%*

**Hazardous Combustion Products:** *CO<sub>2</sub>, CO, various hydrocarbons*

**Sensitivity to Impact:** *None identified*

**Sensitivity to Static discharge:** *Liquid can accumulate static charge by flow or agitation. Vapour may be ignited by static discharge.*

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

**LD<sub>50</sub>:** *(oral, rat) 5,630 mg/kg*

**LC<sub>50</sub>:** *(mouse) 13,500 ppm/2h; (rat) 25,250 ppm/4h*

**Effects of Acute Exposure to Product:**

**Inhaled:** *Readily forms high vapour concentrations. Vapours are irritating to mucous membranes of throat and lungs, burning sensation, coughing, shortness of breath, and CNS symptoms, such as headache, drowsiness, dizziness, nausea and confusion. Exposure to very high concentrations 10,000 to 13,000 ppm, may cause inflammation, and edema of the larynx and bronchi, pulmonary edema, unconsciousness, and death.*

**In contact with skin:** *Moderate to severe skin irritant. Old studies (1936) indicate that liquid is irritating, causing inflammation, blistering.*

**In contact with eyes:** *Vapour and liquid are irritating to eyes, causing redness and pain.*

**Ingested:** *May cause nausea, vomiting, headache, depression. Oral toxicity relatively low unless aspirated into the lungs, when it can cause severe lung damage and death. Aspiration of 0.2 mL caused convulsions and death within seconds in rats, probably due to cardiac arrest and respiratory paralysis.*

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**Effects of Chronic Exposure to Product:**

No chronic effects in humans have been reported. Prolonged or repeated skin contact can cause irritation and dermatitis.

**Carcinogenicity:** Not expected to be carcinogenic. Not listed by IARC, ACGIH, NTP.

**Teratogenicity:** No information available. Not expected to be teratogenic or embryotoxic.

**Reproductive Effects:** No information available. Not expected to cause effects.

**Mutagenicity:** No information available. Not expected to be mutagenic.

**Synergistic Products:** None known

**PREVENTIVE MEASURES**

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

**Respiratory Protection:** To 750 ppm: NIOSH/OSHA approved supplied-air respirator. To 1,000 ppm: supplied-air respirator operated in continuous-flow mode, or full face-piece self-contained breathing apparatus, or full face-piece supplied-air respirator. Higher or unknown concentrations, or fire or spill conditions: positive-pressure, full face-piece self-contained breathing apparatus, or positive-pressure, full face-piece supplied-air respirator with auxiliary positive-pressure self-contained breathing apparatus.

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

**Skin Protection:** Tychem BR/LV, Tychem TK, Responder™ gloves. Other protective clothing, apron, coveralls, boots, sufficient to prevent contact if splash occurs.

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

**Leak and Spill Procedure:** Evacuate area, and provide maximum ventilation. Eliminate all sources of ignition. Cleanup personnel must be thoroughly trained in the handling of hazardous materials, and must wear protective equipment and clothing sufficient to prevent inhalation of mists or vapours and contact with skin and eyes. Do not touch spilled material. Stop or reduce discharge if safe to do so. Contain spill and collect using inert absorbent material. Prevent from entering sewers or waterways. Collect contaminated adsorbent in labelled containers and hold for disposal. Wash site of spill thoroughly with detergent and water.

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

**Handling Procedures and Equipment:** FLAMMABLE, IRRITANT. Personnel working with this substance must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing suitable for the application. Keep away from heat, sparks, flame, and all sources of ignition. Post "No Smoking" signs. Ground and bond drums, transfer vessels, hoses and piping, during liquid transfer. Ground clips must contact bare metal. Use non-sparking tools. Use inert gas in containers or storage vessels to reduce fire/explosion hazard. Keep work area free of other materials that can burn. Keep aisles and exits clear of obstruction. Keep storage and work areas free of combustible or incompatible materials. Use the smallest amount possible for the purpose, in a designated area with adequate ventilation. Keep containers closed when not in use. Empty containers may contain hazardous residues; treat with caution. Do not return contaminated material to the original container. Have absorbents readily available for leaks or spills. Have appropriate fire extinguishers available.

**Storage Requirements:** Store in suitable, labelled containers, a cool, dry, well-ventilated area, out of direct sunlight, and away from heat, sparks and flame, or any combustible or in-

compatible materials (e.g. oxidizing agents). Protect from damage and inspect frequently for signs of damage and/or leaking. Keep tightly closed. Storage area should have raised sills or ramps to contain leaks and/or conduct them to a safe area.

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

**Eyes:** Immediately flush eyes with gently running water, holding eyelids open while flushing, for fifteen to twenty (15-20) minutes, or until no trace of chemical remains. Take care not to flush contaminated water into unaffected eye. Wear protective gloves to prevent contact during first aid procedures. Get medical attention immediately.

**Skin:** Remove contaminated clothing (including shoes, watches, belts, and rings). Wash affected areas with large amounts of running water and non-abrasive soap, for fifteen to twenty (15-20) minutes, or until no trace of chemical remains. Wear protective gloves to prevent contact. If irritation persists, obtain medical attention.

**Inhalation:** IMMEDIATELY remove casualty from contaminated area to fresh air (caution must be used by rescuers to avoid exposure to contaminating fumes). Remove any sources of ignition. 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 mouth with water and give 1 to 2 cups of water to drink to dilute material. IMMEDIATELY get medical attention. If spontaneous vomiting occurs, have casualty lean forward with head down to avoid breathing in of vomitus. Rinse mouth and give more water to drink.

**REFERENCES USED**

CCINFO disc: Cheminfo

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

Royal Society of Chemistry: Chemical Safety Data Sheets, Vol. 1, 1992

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

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979  
Suppliers' Material Safety Data Sheets

**ADDITIONAL INFORMATION**

**Date Issued:** March 1, 1989

**Revision:** November 2011

**MSDS:** 7700-1, 7701-2

**Proposed WHMIS Designation:** B2; D2B (irr)

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