

MATERIAL SAFETY DATA SHEET**1-PENTANOL**

PRODUCT CODE NUMBER(S): 6810-5

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** 1-Pentanol; n-Amyl alcohol**Chemical Family:** Saturated primary aliphatic alcohol**Chemical Formula:** C₅H₁₂O**Product Use:** Laboratory reagent**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**

Ingredients	%	TLV Units	CAS No.
1-Pentanol	>98	Not established	71-41-0

PHYSICAL DATA**Physical State:** Liquid**Odour and Appearance:** Clear, colourless liquid, pleasant, sweet odour**Odour Threshold (ppm):** 10 ppm (recognition, wide range of values reported)**Vapour Pressure (mm Hg):** 1.635 mm Hg at 20°C**Vapour Density (Air = 1):** 3.04**Evaporation Rate (buAc=1):** 0.20**Boiling Point (degrees C):** 137.8°C**Freezing Point (degrees C):** -79°C**pH:** Not applicable**Specific Gravity:** 0.815 at 20°C**Coefficient of Water/Oil distribution:** LogP(oct)=1.42**SHIPPING DESCRIPTION****UN:** 1105**T.D.G. Class:** 3**Pkg. Group:** III**REACTIVITY DATA****Chemical Stability:** Normally stable.**Incompatibility with other substances:** Vapour may form explosive mixtures in air. May react violently or explosively with strong oxidizing agents, alkali metals, alkaline earth metals, halogens, hydrogen trisulphide, acids, acid anhydrides, acid chlorides, lithium aluminum hydride, isocyanates, acetaldehyde, dialkylmagnesiums, n-halomides, ethylene oxide, hypochlorous acid, hydrogen peroxide and sulfuric acid, nitrogen tetroxide, nitryl hypochlorite, permonosulfuric acid and tri-isobutyl aluminum.*Not corrosive to metals, but will corrode aluminum above ~80°C. Attacks some forms of plastics, rubbers, coatings.***Reactivity:** Avoid heat, all ignition sources, exposure to air, generation of mist, all incompatible materials.**Hazardous Decomposition Products:** CO_x**FIRE AND EXPLOSION DATA****Flammability:** Combustible liquid and vapour. Vapour is heavier than air and can travel considerable distance to source of ignition and flash back. Can form explosive mixtures with air, at, or above 49°C.**Extinguishing Media:** Dry chemical, carbon dioxide, alcohol-resistant foam, water spray or fog. Water spray or fog may be used to cool containers, disperse vapours, flush spill away from ignition source, or dilute spill to non-flammable mixture. Fight fire from upwind, from a safe distance. Firefighters must wear NIOSH/MSHA approved positive-pressure, full face-piece self-contained breathing apparatus, and full Bunker Gear. Containers may explode in heat of fire; withdraw immediately in case of rising sound from vent or discoloration of tank.**Flash Point (Method Used):** 49°C (CC)**Autoignition Temperature:** 300°C**Upper Flammable Limit (% by volume):** 10.0**Lower Flammable Limit (% by volume):** 1.2**Hazardous Combustion Products:** CO_x**Sensitivity to Impact:** None identified**Sensitivity to Static discharge:** Liquid will not accumulate static charge. Mixtures of vapour with air, in the flammable range, may be ignited by static discharge.**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** (oral, rat) 2,200 to 3,000 mg/kg; (dermal, rabbit) 2,000 mg/kg**LC₅₀:** Not available**Effects of Acute Exposure to Product:****Inhaled:** Inhalation of vapours cause irritation. Severe overexposures may cause CNS effects with headaches, drowsiness, nausea, vomiting, and diarrhea.**In contact with skin:** No human information available. Based on animal testing, liquid causes severe irritation. Can be absorbed through skin, producing or intensifying toxic effects as in "Inhaled".**In contact with eyes:** No human information available. Based on animal testing, liquid and vapour cause severe irritation, but no significant permanent eye injury.**Ingested:** No specific information. As with other alcohols, may cause irritation and burning of the mouth and throat, abdominal pain, and alcoholic intoxication with headache, dizziness and central nervous system depression. In severe cases, breathing difficulty, unconsciousness, liver damage may occur. Aspiration into the lungs, which may occur dur-

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ing ingestion or vomiting, may cause severe lung damage, respiratory and cardiac arrest and possibly death.

Effects of Chronic Exposure to Product:

Prolonged or repeated skin exposure can cause dermatitis.

Carcinogenicity: Not listed as a carcinogen

Teratogenicity: Animal testing indicates toxicity only at levels which are maternally toxic.

Reproductive Effects: No human or animal information available

Mutagenicity: No human or animal information available. Results of short-term testing inconclusive.

Synergistic Products: Alcohols react synergistically with chlorinated solvents and aromatic hydrocarbons

PREVENTIVE MEASURES

Engineering Controls: Non-sparking, grounded ventilation system, separate from other ventilation systems, and electrical equipment that does not provide a source of ignition.

Respiratory Protection: Fumehood;. Dust/mist mask. Up to 500 ppm: NIOSH approved continuous-flow, supplied-air respirator, or powered, air-purifying respirator with organic vapour cartridges. 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: Butyl or nitrile rubber or Viton gloves. Other protective impervious clothing, sleeves, coveralls, boots sufficient to prevent contact.

Other Personal Protective Equipment: An eyewash and safety shower should be nearby and ready for use.

Leak and Spill Procedure: Restrict access to area of spill. Ventilate area. Eliminate all sources of ignition. Cleanup personnel must be thoroughly trained in the hazards of the product 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. Dike spills. Prevent from entering sewers or waterways. Collect on inert absorbent material and transfer to suitable, labelled, covered containers for recovery or disposal. Contaminated material may pose the same hazards as the chemical; treat with caution. Flush area of spill with copious amounts of running water.

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

Handling Procedures and Equipment: COMBUSTIBLE; IRRITANT, TOXIC. Workers handling this material must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Keep away from all ignition sources. Ground and bond equipment and containers to prevent a static charge buildup. Post "No Smoking" signs. Use spark-resistant tools and avoid splash filling of containers. Avoid generating mists or vapours. Use the smallest amount possible for the purpose, in well-ventilated areas. Avoid all contact and inhalation. Stand upwind of opening, pouring and mixing operations. Keep work area free of incompatible substances and extraneous materials, particularly those which can burn. Do not return contaminated material to the original containers.

Storage Requirements: Store in suitable, labelled containers, in a cool, dry, well-ventilated place, out of direct sunlight, and away from ignition sources and incompatible

materials. Keep air out of container. Keep container tightly closed when not in use and when empty. Protect from damage, and inspect frequently for signs of leaking. Storage facilities should be made of fire-resistant materials and should have raised sills or ramps, with trenching to a safe area.

FIRST AID MEASURES**Specific Measures:**

Eyes: Flush eyes with warm running water for at least twenty (20) minutes, holding eyelids open during flushing. Take care not to flush contaminated water into unaffected eye or onto skin. Wear gloves and other protective clothing to avoid contact with chemical. Get medical attention immediately.

Skin: Immediately remove contaminated clothing under running water (including rings, watches, belts and shoes). Flush exposed area with large amounts of warm running water for at least twenty (20) minutes. Wear gloves and other protective clothing to avoid contact with chemical. Get medical attention immediately. Decontaminate clothing before reuse, or discard.

Inhalation: Remove to fresh air. Give oxygen and get immediate medical attention for any breathing difficulty.

Ingestion: DO NOT INDUCE VOMITING. If the casualty is alert and not convulsing, give 2 to 4 glasses of water to drink to dilute. If spontaneous vomiting occurs, have casualty lean forward to avoid breathing in of emesis. Rinse mouth and administer more water. Get medical attention immediately.

REFERENCES USED

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

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

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

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

Suppliers Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: June 1, 1998

Revision: June 2010

MSDS: 6810-5

Proposed WHMIS Designation: B3; D2B (irritation)

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