

MATERIAL SAFETY DATA SHEET**NONANE**

PRODUCT CODE NUMBER(S): 7550-1, 7551-2

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Nonane; Nonyl hydride***Chemical Family:** *Saturated aliphatic hydrocarbon***Chemical Formula:** $CH_3(CH_2)_7CH_3$ **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>Nonane</i>	<i>>98</i>	<i>200 ppm</i>	<i>111-84-2</i>

PHYSICAL DATA**Physical State:** *Liquid***Odour and Appearance:** *Colourless liquid; gasoline-like odour***Odour Threshold (ppm):** *0.43 ppm (detection); 12-21 ppm (recognition). Not reliable warning properties, wide range of values reported.***Vapour Pressure (mm Hg):** *3.2 mm Hg at 20°C***Vapour Density (Air = 1):** *4.41***Evaporation Rate:** *0.37 (n-butyl acetate = 1)***Boiling Point (°C):** *151°C***Freezing Point (°C):** *-54°C***pH:** *Not applicable***Specific Gravity:** *0.72 @ 25°C***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *1920***T.D.G. Class:** *3***Pkg. Group:** *III***REACTIVITY DATA****Chemical Stability:** *Stable under normal conditions of use and storage.***Incompatibility with other substances:** *Increased risk of fire and explosion with oxygen and strong oxidizing agents. Not corrosive to metals.***Reactivity:** *Avoid heat, sparks, open flame, and all other ignition sources, generation of mist or vapour. Increased risk of fire and explosion with oxidizing agents.***Hazardous Decomposition Products:** *None identified***FIRE AND EXPLOSION DATA****Flammability:** *Flammable liquid and vapour. Vapour forms explosive mixtures with air at or above 31°C. Vapour is heavier than air and may travel to distant source of ignition and flash back. Liquid may float on water and travel to distant locations or spread fire. Containers may rupture in heat of fire.***Extinguishing Media:** *CO₂, 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 (full 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):** *31°C (CC)***Autoignition Temperature:** *205°C***Upper Flammable Limit (% by volume):** *2.9***Lower Flammable Limit (% by volume):** *0.8***Hazardous Combustion Products:** *Carbon dioxide and carbon monoxide, irritating, toxic gases***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *Liquid may accumulate static charge by flow or agitation. Vapour readily ignited by static discharge.***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *(oral, rat) >15 g/kg***LC₅₀:** *(inh. rat) 3,200 ppm/4 h***Effects of Acute Exposure to Product:****Inhaled:** *Concentrated vapour may cause irritation of upper respiratory tract, drowsiness, dizziness, confusion, nausea, tremors, incoordination, shortness of breath. Overexposure to very high concentrations may cause inflammation, and edema of the larynx and bronchi, pulmonary edema, unconsciousness, and death.***In contact with skin:** *Liquid is mildly irritating, removes natural oils, causing dryness, redness, itching.***In contact with eyes:** *Both liquid and vapour are mildly irritating, causing temporary tearing, redness and pain.***Ingested:** *Disagreeable taste like gasoline. Mildly toxic. May cause nausea, vomiting, swelling of abdomen, headache, depression. Oral toxicity is relatively low unless material is aspirated into the lungs, in which case severe lung tissue damage, with pulmonary edema and possible death, can occur.***Effects of Chronic Exposure to Product:***Prolonged or repeated exposure can cause liver and kidney damage and blood effects. Prolonged or repeated skin exposure can cause irritation and dermatitis.*

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Carcinogenicity: Probably not carcinogenic. Not listed by IARC, ACGIH, NTP.

Teratogenicity: No information available. Not expected to be a hazard.

Reproductive Effects: No information available. Not expected to be a hazard.

Mutagenicity: No information available. Not expected to be a hazard.

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: Impervious gloves, apron, sleeves, coveralls and boots, or other protective clothing 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. Ventilate area. Eliminate all sources of ignition (sparks, flames, hot surfaces). Cleanup personnel must be thoroughly trained in handling hazardous chemicals and must wear protective equipment and clothing sufficient to prevent inhalation of mists or vapours and any contact with skin and eyes. Dike and soak up spilled material with inert absorbent. Prevent from entering sewers or waterways. Put contaminated material in suitable, labelled, closed containers for collection by disposal agency. Contaminated absorbent may pose the same hazards as the product, so handle with caution. Flush area of spill thoroughly with copious amounts of running 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. 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, in a cool, dry, well-ventilated area, out of direct sunlight and away from all sources of ignition and incompatible materials. Keep tightly closed when not in use. Protect from

damage. Inspect regularly for signs of leaking or damage. Keep storage area clear of combustible materials. Ground and bond equipment and containers to prevent a static charge buildup. Storage area should be made of non-combustible material and should have raised sills or ramps at doorways.

FIRST AID MEASURES

Specific Measures:

Eyes: Immediately flush eyes with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. Take care not to flush contaminated water into unaffected eye. Get medical attention.

Skin: Remove contaminated clothing (including shoes, watches, belts, and rings). Wash affected areas with large amounts of running water and non-abrasive soap, for five to ten (5-10) minutes, or until no trace of chemical remains. 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. 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: 7550-1, 7551-2

Proposed WHIMS Designation: B2; D1B; D2B (irritant)

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