

MATERIAL SAFETY DATA SHEET**STRONTIUM NITRATE**

PRODUCT CODE NUMBER(S): 8660-1

PRODUCT IDENTIFICATION

Chemical Name and Synonyms: *Strontium nitrate*
Chemical Family: *Inorganic salt*
Chemical Formula: *Sr(NO₃)₂*
Product Use: *Laboratory reagent*
Manufacturer's Name and Address:
Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9
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HAZARDOUS INGREDIENTS OF MATERIALS

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Strontium nitrate</i>	<i>99</i>	<i>0.05 mg/m³</i> <i>(as Sr)</i>	<i>10042-76-9</i>

PHYSICAL DATA

Physical State: *Solid*
Odour and Appearance: *White crystals; odourless*
Odour Threshold (ppm): *Not applicable*
Vapour Pressure (mm Hg): *Not available*
Vapour Density (Air = 1): *7.30*
Evaporation Rate: *Not available*
Boiling Point (degrees C): *645°C*
Melting Point (degrees C): *570°C*
pH: *7 (aqueous solution)*
Specific Gravity: *2.990*
Coefficient of Water/Oil distribution: *Not available*

SHIPPING DESCRIPTION

UN: *1507*
T.D.G. Class: *5.1*
Pkg. Group: *III*

REACTIVITY DATA

Chemical Stability: *Stable in the absence of heat, shock, friction.*
Incompatibility with other substances: *Reducing agents, readily oxidizable materials, organic materials, halogens.*
Reactivity: *Avoid high temperatures, ignition sources, shock and friction, generation of dust, all incompatible or combustible materials. May explode if heated or shocked. Mixtures with combustible materials are readily ignited. Mixtures with combustible materials can react explosively.*
Hazardous Decomposition Products: *Toxic fumes of nitrogen compounds, strontium.*

FIRE AND EXPLOSION DATA

Flammability: *Not combustible but strong oxidizer. Will increase the burning rate of combustible matter. Contact with easily oxidizable, organic, or other combustible materials may result in ignition, violent combustion or explosion. Containers may explode in heat of fire.*
Extinguishing Media: *Do NOT get water inside containers. Do not use dry chemicals or foams. Use flooding amounts of water to blanket fire, and cool exposed containers. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (full face-piece, positive-pressure self-contained breathing apparatus) and clothing sufficient to prevent inhalation of dusts or vapours, and contact with skin and eyes.*

Flash Point (Method Used): *Not applicable*

Autoignition Temperature: *Not applicable*

Upper Flammable Limit (% by volume): *Not applicable*

Lower Flammable Limit (% by volume): *Not applicable*

Hazardous Combustion Products: *Toxic fumes of nitrogen compounds, strontium.*

Sensitivity to Impact: *May explode if shocked, particularly if contaminated with combustible materials*

Sensitivity to Static discharge: *Mixtures of dust with air may be sensitive under certain conditions, particularly when contaminated with organic materials, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

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

LD₅₀: *(oral, rat) 1,892 mg/kg; (oral, mouse) 1,028 mg/kg*
LC₅₀: *Not available*

Effects of Acute Exposure to Product:

Inhaled: *Irritating to the mucous membranes, symptoms may include coughing, sore throat, and shortness of breath. At high temperatures, exposure to toxic nitrogen oxides decomposition products can quickly cause acute respiratory problems. Absorption leads to systemic poisoning with headache, fall in blood pressure, the formation of methemoglobin which decreases the ability of the blood to carry oxygen, causing cyanosis, possible convulsions, coma, and death. Onset may be delayed 2 to 4 hours or longer. Severe overexposure can be fatal.*

In contact with skin: *Causes mild irritation. Dampness on skin increases irritation. Slightly absorption in prolonged or repeated contact.*

In contact with eyes: *Causes severe irritation. Severity of effects will depend on the concentration of dust or mist, and the duration of exposure. Severe overexposure can cause pain, redness, and swelling of conjunctiva, even transient corneal burns.*

Ingested: *Low toxicity for single dose. Large oral doses of nitrates may cause dizziness, abdominal pain, vomiting,*

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bloody diarrhea, weakness, convulsions, and collapse. May cause methemoglobinemia and cyanosis (see "Inhaled").

Effects of Chronic Exposure to Product:

Prolonged contact can cause irritation to eyes, skin and mucous membranes with some absorption. Moderately toxic in prolonged or repeated contact. Can cause inhibition of bone calcification, weakness, changes in cardiovascular and blood systems, liver and kidney effects and CNS depression. May aggravate existing eye disease, skin disorders, allergies, and kidney or liver disease.

Chronic overexposure to nitrates can lead to methemoglobinemia (see "Inhaled"), and conversion of nitrate to nitrite in the stomach, causing nausea and vomiting, blood and central nervous system effects, weakness, depression, headache, irregular heart rate; severe overexposure can cause coma and death.

Carcinogenicity: No information available

Teratogenicity: No information available

Reproductive Effects: Possible radiation hazard

Mutagenicity: No information available

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust recommended.

Respiratory Protection: Dust/mist mask. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH/MSHA approved half-face dust/mist respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

Eye Protection: Chemical safety goggles. Do not wear contact lenses when working with chemicals.

Skin Protection: Wear butyl rubber gloves and clean body-covering clothing sufficient to prevent contact.

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

Leak and Spill Procedure: Restrict access to area of spill. Eliminate all sources of ignition and combustible materials. Cleanup personnel must be thoroughly trained in the hazards of this chemical and its safe use, and must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Wet if necessary to avoid generating dust. Prevent from entering sewers and waterways. Contain spill with inert material (earth, sand, inert absorbent). Use non-sparking tools to collect material, in suitable, labelled, covered containers for disposal. Contaminated absorbent may pose the same hazards as the chemical; treat with caution. Flush area of spill with large amounts of running water.

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

Handling Procedures and Equipment: OXIDIZER, TOXIC. Workers using this chemical must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Keep away from combustible or organic materials, and all sources of ignition. Use non-sparking tools. Avoid all contact and inhalation. Do not shock. Use the smallest amount possible for the purpose, in designated areas with adequate ventilation. Keep work area clean and free of extraneous, particularly combustible, materials. Do not use on porous surfaces (wood); use surfaces that can be easily and thoroughly cleaned. Clean up spills immediately and thoroughly. Keep containers closed when not in use and when

empty. Empty containers may contain hazardous residues; treat with caution. Wash hands thoroughly after use. Never reuse containers, even if they appear to be clean.

Storage Requirements: Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight, and away from incompatible, combustible or organic materials. Storage facilities (shelves, floors) should be constructed of non-combustible materials. Keep away from all ignition sources. Keep containers tightly closed when not in use and when empty. Protect from damage, and inspect frequently for signs of leaking; unattended spillage onto combustible materials (wood, paper, etc.) could result in fire.

FIRST AID MEASURES**Specific Measures:**

Eyes: Flush eyes immediately with large amounts of gently running water or normal saline, holding eyelids open, until no evidence of chemical remains (at least 15-20 minutes). Take care not to flush contaminated water into unaffected eye. Get medical attention immediately.

Skin: Remove contaminated clothing, including watches, rings, belts, and shoes. Wash skin with plenty of running water for five to ten (5-10) minutes, or until no trace of chemical remains. If irritation develops get medical attention. Decontaminate clothing before reuse, or discard; clothing may become dangerously flammable after contact with this chemical.

Inhalation: Remove to fresh air. Rescuer should take precaution to limit his own exposure. Eliminate all sources of ignition. Give oxygen and get medical attention for any breathing difficulty. Because exposure to nitrates can cause methemoglobinemia, the symptoms of which may be delayed, unless exposure is minor, the victim needs to be monitored for several hours for cyanosis, irregular heart rate, loss of consciousness.

Ingestion: If victim is alert and not convulsing, rinse mouth thoroughly and give 2 to 4 glasses of water to drink to dilute. Do not induce vomiting. Get medical attention. If spontaneous vomiting occurs, rinse mouth thoroughly and give more water to drink.

REFERENCES USED

CCINFO disc: MSDS's, February 2007

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

Royal Society of Chemistry, Chemical Safety Data Sheets, Vol. 2, 1989

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: February 20, 1990

Revision: February 2010

MSDS: 8660-1

Proposed WHMIS Designation: C; D2B

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