

**MATERIAL SAFETY DATA SHEET****POTASSIUM THIOCYANATE**

PRODUCT CODE NUMBER(S): 6820-1

**PRODUCT IDENTIFICATION****Chemical Name and Synonyms:** *Potassium thiocyanate***Chemical Family:** *Inorganic salt***Chemical Formula:** *KSCN***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**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Potassium thiocyanate</i>	<i>&gt;99</i>	<i>5 mg/m<sup>3</sup> (as CN)</i>	<i>333-20-0</i>

**PHYSICAL DATA****Physical State:** *Solid***Odour and Appearance:** *Colourless, deliquescent crystals; odourless. When moist, HCN odour.***Odour Threshold (ppm):** *0.2-5 ppm as HCN***Vapour Pressure (mm Hg):** *Not available***Vapour Density (Air = 1):** *Not available***Evaporation Rate:** *Not available***Boiling Point (degrees C):** *500°C (decomposes)***Melting Point (degrees C):** *173°C***pH:** *5.5 to 7.0 (1M, aqueous, 20°C)***Specific Gravity:** *1.886***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *Not regulated***T.D.G. Class:** *Not regulated***Pkg. Group:** *Not regulated***REACTIVITY DATA****Chemical Stability:** *Stable. May decompose on exposure to moisture and light.***Incompatibility with other substances:** *Reaction with oxidizing agents, nitrates, nitrites, chlorates, and peroxides liberates very toxic gas. May react violently with acids, perchloryl fluoride. Mixtures with sodium nitrite explode when heated to 270°C. Mixtures with potassium nitrite explode at 370°C.***Reactivity:** *Avoid high temperatures, exposure to moisture and light, all incompatible materials, generation of dust.***Hazardous Decomposition Products:** *Toxic fumes of SO<sub>x</sub>, cyanides and NO<sub>x</sub>***FIRE AND EXPLOSION DATA****Flammability:** *Non combustible.***Extinguishing Media:** *Use extinguishing media appropriate to the surrounding fire that is not incompatible with potassium thiocyanate. Do not use extinguishers containing CO<sub>2</sub> or acid (causes release of toxic, flammable vapours). If you use water as spray or fog to minimize dust, absorb heat, cool containers, and disperse vapours, do not let it come in contact with the product. Fight fire from upwind, from a safe distance. Firefighters must wear NIOSH approved positive-pressure, full face-piece self-contained breathing apparatus, and chemical splash suit (Bunker gear will not be adequate).***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 CO<sub>x</sub>, NO<sub>x</sub>, SO<sub>x</sub>, potassium and cyanides.***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD<sub>50</sub>:** *(oral, rat) 854 mg/kg; (oral, mouse) 594 mg/kg***LD<sub>Lo</sub>:** *(oral, hum) 80 mg/kg***LC<sub>50</sub>:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Harmful. May cause shortness of breath, coughing. Severe overexposure may cause systemic poisoning with symptoms as in "Ingested".***In contact with skin:** *No human or animal information available. Contact with dry material may cause irritation. Solutions are probably moderately irritating, causing redness, itching pain. Extent of irritation depends on concentration and duration of exposure.***In contact with eyes:** *Irritating; causes redness, tearing, and pain. Extent of irritation depends on concentration and duration of exposure.***Ingested:** *Toxic. Ingestion may cause vomiting, disorientation, weakness, low blood pressure, convulsions and death which may be delayed 24 to 48 hours. Probable lethal dose 15-30 g.***Effects of Chronic Exposure to Product:***Symptoms thought to be caused by long-term, low level (less than 10 ppm) cyanide exposure are persistent runny nose, weakness, dizziness, giddiness, headache, nausea, vomiting, abdominal pain, throat irritation, changes in taste*

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and smell, muscle cramps, weight loss, enlargement of the thyroid gland. These have not been proven attributable specifically to cyanide exposure. There is concern that prolonged exposure may cause damage to the nerves for the eyes. Prolonged skin exposure may cause dermatitis or sensitization.

**Carcinogenicity:** No information available

**Teratogenicity:** No information available

**Reproductive Effects:** Produced some reproductive disorders in experiments with laboratory animals.

**Mutagenicity:** No information available

**Synergistic Products:** None known

## PREVENTIVE MEASURES

**Engineering Controls:** Local exhaust required

**Respiratory Protection:** Dust mask. NIOSH approved respirator for dusty conditions. High 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 auxiliary positive-pressure self-contained breathing apparatus

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

**Skin Protection:** Neoprene gloves. Other impervious protective clothing, sleeves, apron, coverall, boots, 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. 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. Prevent from entering sewers and waterways. Contain spill with inert material (earth, sand, inert absorbent). Avoid generating dust. Collect 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:** TOXIC, Workers using this chemical must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Follow routine safe handling procedures. Prevent release of vapours, mists or dusts into workplace air. Avoid contact with skin, eyes and clothing. Keep away from all incompatible materials (can release very toxic gas on contact with some chemicals). Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Keep containers closed when not in use and when empty. Empty containers may contain hazardous residues; treat with caution. Wash thoroughly after working with this product.

**Storage Requirements:** Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Store away from incompatible materials. Keep containers tightly closed when not in use and when empty. Protect from damage, and inspect frequently for signs of leaking.

## FIRST AID MEASURES

### Specific Measures:

**Eyes:** Flush eyes with gently running water for ten to fifteen (10-15) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear gloves to avoid contact with the chemical. Get medical attention.

**Skin:** Under running water, remove contaminated clothing (including watches, rings, belts, and shoes). Drench affected skin with water for ten to fifteen (10-15) minutes. Wear gloves to avoid contact with the chemical. Get medical attention. Decontaminate clothing before reuse, or discard.

**Inhalation:** IMMEDIATELY remove to fresh air. Give oxygen and get medical attention for any breathing difficulty. If symptoms of cyanide poisoning are present and the casualty is breathing, break capsule of amyl nitrite into a cloth and give to inhale for 15 to 30 seconds of each minute. Use a new pearl every 5 minutes (0.3 mg size) or every 3 minutes (0.18 mg size). While amyl nitrite is being used, monitor the victim's blood pressure. If it drops below 80/60, stop the amyl nitrite.

**Ingestion:** DO NOT INDUCE VOMITING. If the casualty is conscious and not convulsing, rinse mouth thoroughly with water and give 2 to 4 glasses of water to drink to dilute. If spontaneous vomiting occurs, rinse mouth and give more water to drink. Obtain medical attention immediately. See "Inhalation" for treatment of cyanide poisoning.

## REFERENCES USED

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

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

Suppliers' Material Safety Data Sheets

## ADDITIONAL INFORMATION

**Date Issued:** February 20, 1990

**Revision:** July 2010

**MSDS:** 6820-1

**Proposed WHMIS Designation:** D2B

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