

MATERIAL SAFETY DATA SHEET**POTASSIUM FERROCYANIDE**

PRODUCT CODE NUMBER(S): 6140-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Potassium ferrocyanide, Tetrapotassium ferrocyanide; Potassium hexacyanoferrate (II)***Chemical Family:** *Inorganic salt***Chemical Formula:** $K_4Fe(CN)_6 \cdot 3H_2O$ **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 ferrocyanide</i>	98	5 mg/m^3 (as CN)	14459-95-1

PHYSICAL DATA**Physical State:** *Solid***Odour and Appearance:** *Lemon yellow crystals or powder; odourless***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *Not applicable***Vapour Density (Air = 1):** 12.7**Evaporation Rate:** *Not applicable***Boiling Point (degrees C):** *Decomposes***Melting Point (degrees C):** *60-100°C (loses water @ 60°C)***pH:** *Not available***Specific Gravity:** 1.853 @ 17°C**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:** *Normally stable, effloresces (loses water) on exposure to air. Sensitive to light.***Incompatibility with other substances:** *Emits toxic cyanides fumes when heated to decomposition, or on contact with acid or acid fumes. Incompatible with ammonia, chromic anhydride, cupric nitrate, sodium nitrate. Mixtures with sodium nitrite or chromium trioxide explode on heating.**Contact with ammonium at room temperature may be explosive. Application of heat with other compounds listed may be explosive.***Reactivity:** *Avoid excessive heat, generation of dust, ignition sources, all incompatible materials, exposure to air and light.***Hazardous Decomposition Products:** *Highly toxic fumes of cyanides, oxides of carbon, nitrogen and potassium.***FIRE AND EXPLOSION DATA****Flammability:** *Not combustible, but may liberate flammable hydrogen cyanide on heating.***Extinguishing Media:** *Use an extinguisher appropriate to the surrounding material that is burning. Use dry chemical or foam to stop vapours. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (positive-pressure, full face-piece self-contained breathing apparatus) and clothing (full Bunker Gear or chemical splash suit) sufficient to prevent inhalation of dust or fumes, and contact with skin, eyes, and clothing.***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 cyanides, CO_x, NO_x***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *(oral, rat) 6,400 mg/kg***LC₅₀:** *Not available***Effects of Acute Exposure to Product:***To the best of our knowledge, the physical, chemical, and toxicological properties of this substance have not yet been thoroughly investigated. It is thought not to decompose to cyanide in the body.***Inhaled:** *May be irritating. May cause coughing, shortness of breath. Overexposure may cause anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), weak and irregular heart beat, collapse, unconsciousness, convulsions, eventual coma and death. When heated or on contact with acid or acid fumes emits very toxic fumes of cyanides.***In contact with skin:** *Dusts or solutions may cause mild irritation. No human or animal information available.***In contact with eyes:** *Dusts or solutions are probably irritating. No human or animal information available.***Ingested:** *Oral doses may produce nausea and vomiting. Not decomposed to cyanide in the body and therefore not as*

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powerful a poison as the simple cyanides. However ingestion may cause systemic symptoms as in "Inhaled". Ingestion of large amounts of iron salts can cause iron poisoning with black stool, pink urine discoloration, liver damage, coma, and even death. Symptoms may be delayed for two to three days.

Effects of Chronic Exposure to Product:

Prolonged or repeated ingestion can cause iron poisoning, with black stool, pink urine discoloration, liver damage, coma, and even death.

Carcinogenicity: Not listed as carcinogen by NTP, IARC, OSHA.

Teratogenicity: No information available

Reproductive Effects: No information available

Mutagenicity: No information available

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation recommended.

Respiratory Protection: Dust/mist mask. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH approved half-face high-efficiency dust/mist filter respirator, or NIOSH approved full face-piece high-efficiency dust/mist filter 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 and/or face shield. Do not wear contact lenses when working with this product.

Skin Protection: Impervious 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: Ventilate area. 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. Contain spill and prevent contact with acids. 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. 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: Workers using this chemical must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Prevent release of dusts into workplace air. Avoid contact and inhalation. Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Keep work area clean and free of extraneous materials. Keep containers closed when not in use and when empty. Wash thoroughly after handling.

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.

FIRST AID MEASURES**Specific Measures:**

Eyes: Flush eyes thoroughly 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. If irritation persists, get medical attention.

Skin: Remove contaminated clothing. Brush or wipe off dry material. Wash skin with plenty of water until no evidence of chemical remains. If irritation develops get medical attention. Decontaminate clothing before reuse, or discard.

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

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.

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: June 2010

MSDS: 6140-1

Proposed WHMIS Designation: Insufficient information available

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