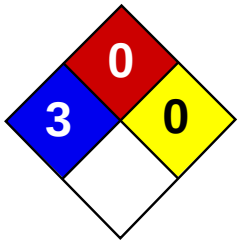

Material Safety Data Sheet
Potassium cyanide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Potassium cyanide

Catalog Codes: SLP3853, SLP1036

CAS#: 151-50-8

RTECS: TS8750000

TSCA: TSCA 8(b) inventory: Potassium cyanide

CI#: Not available.

Synonym:

Chemical Name: Potassium Cyanide

Chemical Formula: KCN

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Potassium cyanide	151-50-8	100

Toxicological Data on Ingredients: Potassium cyanide: ORAL (LD50): Acute: 5 mg/kg [Rabbit]. 8.5 mg/kg [Mouse]. 5 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (permeator), of ingestion, of inhalation. Hazardous in case of skin contact (irritant), of eye contact (irritant). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to blood, liver. The substance may be toxic to cardiovascular system, upper respiratory tract, Urinary system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion:
Notes to Physcian: Exposure should be treated as cyanide poisoning. Antidote: Always have a cyanide antidote kit on hand when working with cyanide compounds. Get medical advice to use.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of oxidizing materials.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Contact with acids or acid salts causes immediate formation of toxic and flammable hydrogen cyanide gas.

Special Remarks on Explosion Hazards:
Chlorates + potassium cyanide explode when heated. Potassium cyanide + nitrites may cause explosion. Nitrogen trichloride explodes on contact with potassium cyanide. Potassium cyanide + hydrogen cyanide is a frictioin and impact-sensitive explosive and may initiate detonation of liquid hydrogen cyanide. Mercuric nitrate + potassium cyanide explodes when heated and contained in narrow iignition tubes. Perchloryl fluoride + potassium cyanide causes an explosive reaction at 100-300 C. Potassium cyanide + ammoniacal silver, following heating, shock or standing can cause an explosion. Heating of potassium cyanide & chromium tetraoxide can cause an explosion. Mixtures of metal cyanides with metal chlorates, perchlorates, or nitrates causes a violent explosion.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.

Large Spill:
Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of acetic acid. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

Storage:
Moisture Sensitive. Light Sensitive. Protect from light. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
STEL: 5 (mg/m3) from ACGIH (TLV) [United States] CEIL: 0.7 from NIOSH [United States] CEIL: 5 (mg/m3) from NIOSH [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance:
Solid. (Crystalline or Granular solid. Deliquescent solid.)

Odor:
Almond-like. Like bitter almonds. Odor of hydrogen cyanide (Slight.)

Taste: Not available.

Molecular Weight: 65.11 g/mole

Color: White.

pH (1% soln/water): 11 [Basic.]

Boiling Point: 1625°C (2957°F)

Melting Point: 634.5°C (1174.1°F)

Critical Temperature: Not available.

Specific Gravity: 1.553 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol.

Solubility:
Easily soluble in hot water. Soluble in cold water. Partially soluble in methanol. Very slightly soluble in ethanol (0.57 g/100 g @ 19.5 deg. C)) Solubility in hydroxylamine 41 g/100 g @ 7.5 deg. C. Solublility in formamide: 146 g/l @ 25 deg. C Solubility in Water: Soluble in 2 parts of cold, 1 part boiling water. Soluble in 2 parts of glycerol. Soluble in 25 parts of methanol (4.91 g/100 g methanol @ 19.5 deg. C) Solubility in liquid sulflur dioxide: 0.017 g/100 g @ 0 deg. C. Solubility in dimethylformamide: 0.22 g/100 g @ 25 deg. C. Solubility in anhydrous liquid ammonia: 4.55 g/100 g @ -33.9 deg. C.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, water, moisture, light,air

Incompatibility with various substances:
Highly reactive with oxidizing agents. Reactive with acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Moisture sensitive. Air Sensitive. Deliquescent. Protect from light. Reacts with water or any acid releasing hydrogen cyanide. Toxic gases and vapors (such as hydrogen cyanide and carbon monoxide) may be released when potassium cyanide decomposes. Incompatible with acids, acid syrups, alkaloids, chloral hydrate, iodine, metallic salts, permanganates, chlorates, peroxides. Potassium cyanide may react with carbon dioxide in ordinary air to form toxic hydrogen cyanide gas. Potasssium cyanide is readily oxidized by heating to potassium cyanate in presence of oxygen or easily reduced oxides.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 5 mg/kg [Rat].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Causes damage to the following organs: blood, liver. May cause damage to the following organs: cardiovascular system, upper respiratory tract, Urinary system, central nervous system (CNS).

Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects (female fertility and fetotoxicity). May affect genetic material.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May be fatal if absorbed through skin. Causes skin irritation and possible burns especially if the skin is wet or moist. May be absorbed through skin and cause symptoms similar to those described for ingestion. Eyes: Causes eye irritation and possible eye burns. Inhalation: May be fatal if inhaled. Causes respiratory tract and mucous membrane irritation. Inhalation of high concentrations may cause central nervous system effects similar to those described for ingestion. Ingestion: May be fatal if swallowed. Causes severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause tissue anoxia. May affect behavior/Central Nervous system, Metabolism, cardiovascular system, respiratory system, blood, respiration. Symptoms of cyanide poisoning may include flushing, nausea, vomiting, palpitations, tachycardia, hypotension, hypertension, increased pulse rate, arrhythmias, heart conduction defects, hypernea, headache, dizziness, confusion, anxiety, agitation, tremors, weakness, hyperventilation, dyspnea, apnea, severe hypoxic signs in absence of cyanosis (cyanosis is generally late finding), convulsions, seizures, memory loss, insomnia, metabolic acidosis, poor appetite. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contract may cause dermatitis. Ingestion: Prolonged or repeated exposure from ingestion may affect the urinary system, brain, liver and thyroid (goiter) as well have the same effects as acute overexposure.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Potassium cyanide UNNA: 1680 PG: I

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Potassium cyanide Illinois chemical safety act: Potassium cyanide New York acutely hazardous substances: Potassium cyanide Rhode Island RTK hazardous substances: Potassium cyanide Pennsylvania RTK: Potassium cyanide Minnesota: Potassium cyanide Massachusetts RTK: Potassium cyanide Massachusetts spill list: Potassium cyanide New Jersey: Potassium cyanide

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS E: Corrosive solid. WHMIS Class B-6: Reactive and very flammable material.

DSCL (EEC):
R16- Explosive when mixed with oxidizing substances. R28- Very toxic if swallowed. R38- Irritating to skin. R40- Possible risks of irreversible effects. R41- Risk of serious damage to eyes. S1/2- Keep locked up and out of the reach of children. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28- After contact with skin, wash immediately with plenty of [***] S36/37- Wear suitable protective clothing and gloves. S39- Wear eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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