

Material Safety Data Sheet

Potassium cyanide

ACC# 19350

Section 1 - Chemical Product and Company Identification

MSDS Name: Potassium cyanide

Catalog Numbers: AC196600000, AC196602500, AC196605000, AC316450000, AC316450250, AC316455000, AC388310000, AC388315000, AC424100000, AC424100025, AC424100250, AC424105000, P223I-100, P223I-500

Synonyms: Cyanide of potassium; Hydrocyanic acid, potassium salt; KCN.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
151-50-8	Potassium cyanide	>96	205-792-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white crystalline powder.

Danger! May be fatal if inhaled, absorbed through the skin or swallowed. Contact with acids liberates toxic gas. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Hygroscopic (absorbs moisture from the air). Corrosive to aluminum.

Target Organs: Central nervous system, lungs, eyes, thyroid, skin.

Potential Health Effects

Eye: Causes eye irritation. Causes redness and pain.

Skin: May be fatal if absorbed through the skin. Contact with skin causes irritation and

possible burns, especially if the skin is wet or moist. If absorbed, causes symptoms similar to those of ingestion. Concentrated HCN vapor may also be absorbed through the skin.

Ingestion: May be fatal if swallowed. May cause tissue anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis (bluish skin due to deficient oxygenation of the blood), weak and irregular heart beat, collapse, unconsciousness, convulsions, coma and death. May cause nausea and vomiting.

Inhalation: May be fatal if inhaled. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Causes respiratory tract irritation. May cause effects similar to those described for ingestion.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated contact may cause skin necrosis and/or ulceration of the skin. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. Chronic exposure to cyanide solutions may lead to the development of a "cyanide" rash, characterized by itching, and by macular, papular, and vesicular eruptions, and may be accompanied by secondary infections. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation of the upper respiratory tract and eyes.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: SPEED IS ESSENTIAL. A DOCTOR MUST BE NOTIFIED AT ONCE. Call a poison control center. POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: SPEED IS ESSENTIAL, OBTAIN MEDICAL AID IMMEDIATELY. POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Exposure should be treated as a cyanide poisoning.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes. Substance is noncombustible.

Extinguishing Media: Use water spray to cool fire-exposed containers. Do NOT use carbon dioxide. Use alkali dry chemical.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 4; Flammability: 0; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Store in a cool, dry place. Store in a tightly closed container. Poison room locked. Keep away from acids. Do not store in aluminum containers.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Potassium cyanide	Skin - potential significant contribution to overall exposure by the cutaneous route; 5 mg/m ³ Ceiling (as CN, listed under Hydrogen cyanide and cyanide salts)	25 mg/m ³ IDLH (as CN)	5 mg/m ³ TWA (listed under Cyanide anion).

OSHA Vacated PELs: Potassium cyanide: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder

Appearance: white

Odor: faint odor of bitter almond

pH: 11 (0.1N aq soln)

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 1625 deg C

Freezing/Melting Point: 634 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 1.52 @ 16°C

Molecular Formula: KCN

Molecular Weight: 65.12

Section 10 - Stability and Reactivity

Chemical Stability: Absorbs carbon dioxide from the air. Light sensitive. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Incompatible materials, light, dust generation, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Acids, bases, aluminum, chlorates, permanganates, peroxides, zinc, aldehydes (e.g. acetaldehyde, acrolein, chloral, formaldehyde), metallic salts, chloral hydrate, iodine.

Hazardous Decomposition Products: Hydrogen cyanide, nitrogen oxides, oxides of potassium.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 151-50-8: TS8750000

LD50/LC50:

CAS# 151-50-8:

Oral, mouse: LD50 = 8500 ug/kg;

Oral, rabbit: LD50 = 5 mg/kg;

Oral, rat: LD50 = 5 mg/kg;

Oral, rat: LD50 = 6 mg/kg;

Human LDLo Oral: 2857 ug/kg.

Carcinogenicity:

CAS# 151-50-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Increased incidence of several symptoms was seen in individuals exposed to cyanide, for approximately 7 years, compared to control subjects. The symptoms experienced, in descending order of frequency, were headache, weakness, changes in taste and smell, irritation of the throat, vomiting, and effort dyspnea. Enlargement of the thyroid was reported in 50% of the workers; it was attributed possibly to the effects of thiocyanate, the chief metabolite of cyanide.

Teratogenicity: Animal studies have only shown harmful effects in the offspring of animals exposed to doses which also produced significant maternal toxicity.

Reproductive Effects: See actual entry in RTECS for complete information.

Mutagenicity: See actual entry in RTECS for complete information.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Daphnia: Daphnia: 2 mg/l; 48H; EC50 No data available.

Environmental: Aquatic Fate: The alkali metal salts are very soluble in water, and as a result, they readily dissociate into their respective anions and cations upon release to water. The resulting cyanide ion may then form hydrogen cyanide or react with various metals present in natural water. If the cyanide ion is present in excess, complex metalocyanides may form; however, if metals are prevalent, simple metal cyanides may form.

Physical: Not expected to biodegrade or bioconcentrate.

Other: Insecticide - Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: CAS# 151-50-8: waste number P098.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	POTASSIUM CYANIDE, SOLID	POTASSIUM CYANIDE
Hazard Class:	6.1	6.1(9.2)
UN Number:	UN1680	UN1680
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 151-50-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 151-50-8: 10 lb final RQ; 4.54 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 151-50-8: 100 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solvent form)

SARA Codes

CAS # 151-50-8: immediate.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 151-50-8 is listed as a Hazardous Substance under the CWA. CAS# 151-50-8 is listed as a Priority Pollutant under the Clean Water Act. CAS# 151-50-8 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 151-50-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T+ N

Risk Phrases:

R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

R 32 Contact with acids liberates very toxic gas.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 29 Do not empty into drains.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 7 Keep container tightly closed.

S 60 This material and its container must be disposed of as hazardous waste.

S 28A After contact with skin, wash immediately with plenty of water

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 151-50-8: 3

Canada - DSL/NDSL

CAS# 151-50-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1A, D2B, E.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 151-50-8 (listed as Cyanides, inorganic salts) is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/23/1997

Revision #9 Date: 6/19/2007

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