

POTASSIUM CYANIDE

PTC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Cyanide	Solid crystals White Almond odor
Sinks and mixes with water.	
<p>Keep people away. AVOID CONTACT WITH SOLID, DUST AND WATER SOLUTION. Wear chemical protective suit with self-contained breathing apparatus. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Not flammable.
Exposure	<p>CALL FOR MEDICAL AID. DUST POISONOUS IF INHALED OR IF SKIN IS EXPOSED. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>SOLID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Irritating to eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: KCN
- 2.3 IMO/UN Designation: 6.1/1680
- 2.4 DOT ID No.: 1680
- 2.5 CAS Registry No.: 151-50-8
- 2.6 NAERG Guide No.: 157
- 2.7 Standard Industrial Trade Classification: 52381

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wear dry cotton gloves and U.S. Bureau of Mines approved dust respirator when handling solid potassium cyanide. Wear rubber gloves and approved chemical safety goggles when handling solutions.
- 3.2 **Symptoms Following Exposure:** Is a rapidly fatal poison when taken into the digestive system. Dust may cause toxic symptoms when inhaled, and prolonged contact with the skin may cause irritation and possibly poisoning if skin is broken. Strong solutions are corrosive to skin and may cause deep ulcers that heal slowly.
- 3.3 **Treatment of Exposure:** INGESTION: call physician immediately; have victim lie down and keep him quiet and warm. If he is CONSCIOUS, induce vomiting by having him drink warm salt water (1 tablespoon per cup of water); repeat until vomit fluid is clear; then give orally 1 pint of 1% solution of sodium thiosulfate, to be repeated in 15 min. If victim is NOT BREATHING, give artificial respiration until breathing starts. If victim is UNCONSCIOUS BUT BREATHING, give oxygen from an inhalator if he does not respond to treatment. In all cases, break an amyl nitrite pearl* in a cloth and hold lightly under victim's nose for 15 sec., repeating 5 times at about 15-sec. intervals; if necessary, repeat procedure every 3 min. with fresh pearls until 3 or 4 have been used. *Amyl nitrite pearls must not be over 2 years old. Avoid breathing the vapor while administering it to the victim.
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: 5 mg/m³
- 3.7 Toxicity by Ingestion: Grade 4; LD₅₀ below 50 mg/kg (mice)
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: None
- 3.10 Vapor (Gas) Irritant Characteristics: Non-volatile, but moisture in air can liberate some lethal hydrogen cyanide gas.
- 3.11 Liquid or Solid Characteristics: Moist solid can cause caustic-type irritation of skin and formation of ulcers.
- 3.12 Odor Threshold: Currently not available
- 3.13 IDLH Value: 25 mg/m³ (as cyanide)
- 3.14 OSHA PEL-TWA: 5 mg/m³
- 3.15 OSHA PEL-STEL: Not listed.
- 3.16 OSHA PEL-Ceiling: Not listed.
- 3.17 EPA AEG1: Not listed

4. FIRE HAZARDS

- 4.1 Flash Point: Not flammable
- 4.2 Flammable Limits in Air: Not flammable
- 4.3 Fire Extinguishing Agents: Not pertinent
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Not pertinent
- 4.6 Behavior in Fire: Not pertinent
- 4.7 Auto Ignition Temperature: Not flammable
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: Not flammable
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: Not pertinent.
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: When potassium cyanide dissolves in water, a mild reaction occurs and some poisonous hydrogen cyanide gas is released. This gas is not hazardous except in an enclosed space. If the water is acidic, however, toxic amounts of the gas will form at once.
- 5.2 Reactivity with Common Materials: Contact with even weak acids causes formation of deadly hydrogen cyanide gas.
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 0.16 ppm/48 hr/bluegill/TL_m/fresh water
0.49 ppm/48 hr/adult zebrafish/TL_m/salt water
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): 0% of theoretical in 7 days
- 6.4 Food Chain Concentration Potential: None
- 6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 4
Human Oral hazard: 3
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: 99.0%
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Sealed containers must be stored in a well-ventilated area.
- 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available
- 7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Poison
- 8.2 49 CFR Class: 6.1
- 8.3 49 CFR Package Group: I
- 8.4 Marine Pollutant: Yes
- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	4
Flammability (Red).....	0
Instability (Yellow).....	0
- 8.6 EPA Reportable Quantity: 10 pounds
- 8.7 EPA Pollution Category: A
- 8.8 RCRA Waste Number: P098
- 8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15° C and 1 atm: Solid
- 9.2 Molecular Weight: 65.12
- 9.3 Boiling Point at 1 atm: Very high
- 9.4 Freezing Point: 1174.1°F = 634.5°C = 907.7°K
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.52 at 16°C (solid)
- 9.8 Liquid Surface Tension: Not pertinent
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
- 9.12 Latent Heat of Vaporization: Not pertinent
- 9.13 Heat of Combustion: Not pertinent
- 9.14 Heat of Decomposition: Not pertinent
- 9.15 Heat of Solution: Not pertinent
- 9.16 Heat of Polymerization: Not pertinent
- 9.17 Heat of Fusion: 53.7 cal/g
- 9.18 Limiting Value: Currently not available
- 9.19 Reid Vapor Pressure: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
77	71.599		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T