

CALCIUM CYANIDE

CCN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Cyanide of calcium Cyanogas A-dust Cyanogas G-fumigant		Solid	White to gray or black	Almond odor
		Sinks and mixes with water.		
<p>Evacuate. KEEP PEOPLE AWAY. AVOID CONTACT WITH SOLID AND DUST. Wear goggles and self-contained breathing apparatus. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Not flammable. POISONOUS GASES ARE PRODUCED WHEN HEATED. DO NOT USE WATER, FOAM OR CARBON DIOXIDE ON ADJACENT FIRES.			
Exposure	CALL FOR MEDICAL AID. DUST POISONOUS IF INHALED. Irritating to eyes, nose and throat. Move victim to fresh air. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. SOLID POISONOUS IF SWALLOWED. Irritating to skin and 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.			
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

Stop discharge

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: Ca(CN)₂ plus inert ingredients
- 2.3 IMO/UN Designation: 6.1/1575
- 2.4 DOT ID No.: 1575
- 2.5 CAS Registry No.: 592-01-8
- 2.6 NAERG Guide No.: 157
- 2.7 Standard Industrial Trade Classification: 52381

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus and full protective clothing, including rubber footwear.
- 3.2 **Symptoms Following Exposure:** Inhalation or ingestion causes headache, nausea, vomiting and weakness; high concentrations are rapidly fatal.
- 3.3 **Treatment of Exposure:** Call a doctor immediately. **INHALATION:** break amyl nitrite pearl in cloth and hold lightly under nose for 15 sec.; repeat 5 times at 15-sec. intervals; use artificial respiration if breathing stops. **EYES:** flush with water for 15 min.; do not allow water to enter nose or mouth. **SKIN:** flush with water; do not allow water to enter nose or mouth. **INGESTION:** break an amyl nitrite pearl in a cloth and hold lightly under nose for 15 sec.; if patient is conscious, induce vomiting and repeat until vomit is clear; repeat inhalation of amyl nitrite 5 times at 15-sec. intervals; use artificial respiration if breathing has stopped.
- 3.4 **TLV-TWA:** Not listed.
- 3.5 **TLV-STEL:** Not listed.
- 3.6 **TLV-Ceiling:** 5 mg/m³ as cyanide.
- 3.7 **Toxicity by Ingestion:** Grade 4; oral LD₅₀ = 39 mg/kg (rat)
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Currently not available
- 3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available
- 3.11 **Liquid or Solid Characteristics:** Currently not available
- 3.12 **Odor Threshold:** Currently not available
- 3.13 **IDLH Value:** 25 mg/m³ as cyanide
- 3.14 **OSHA PEL-TWA:** 5 mg/m³ as cyanide.
- 3.15 **OSHA PEL-STEL:** Not listed.
- 3.16 **OSHA PEL-Ceiling:** Not listed.
- 3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:** Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Use dry chemical, sand, or earth on adjacent fires.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Do not use water or carbon dioxide on adjacent fires.
- 4.5 **Special Hazards of Combustion Products:** Decomposes in fire to give very toxic gases, including hydrogen cyanide.
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 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:** Releases very poisonous hydrogen cyanide gas slowly on contact with water. Release is rapid if acid is also present.
- 5.2 **Reactivity with Common Materials:** No reaction
- 5.3 **Stability During Transport:** Stable if kept dry
- 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:** 0.12 ppm/96 hr/sunfish/TL_m/fresh water >25 ppm/48 hr/cookle/LC₅₀/salt water
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Currently not available
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 42% with 58% inert ingredients. May contain up to 3% calcium carbide, which releases flammable acetylene gas when wet.
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** well-sealed containers in 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).....	3
Flammability (Red).....	0
Instability (Yellow).....	0
- 8.6 **EPA Reportable Quantity:** 10 pounds
- 8.7 **EPA Pollution Category:** A
- 8.8 **RCRA Waste Number:** P021
- 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:** 92
- 9.3 **Boiling Point at 1 atm:** Decomposes
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.853 at 20°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:** -264 Btu/lb = -147 cal/g = -6.14 X 10⁵ J/kg
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 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
	M I S C I B L E		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