

PROPIONITRILE

PCN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Cyanoethane Ether cyanatus Ethylcyanide Hydrocyanic ether Propanenitrile Propionic nitrile	Liquid Colorless Ethereal odor Floats on water.
<p>KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID OR VAPOR. EVACUATE AREA. Shut off all sources of ignition, call fire department. Wear positive pressure breathing apparatus and special protective clothing. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	<p>FLAMMABLE. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire. Vapor explosion and poison hazard indoors, outdoors or in sewers. Extinguish fires with dry chemical, CO₂, foam, or water spray. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire.</p>
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes, nose, and throat. Harmful if inhaled. IF INHALED: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to the skin and eyes. Harmful if swallowed or skin is exposed. Remove and isolate contaminated clothing and shoes at the site. Flush affected areas immediately 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 victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS: do nothing except keep victim warm. Effects may be delayed; keep victim under observation.</p>
Water Pollution	<p>HARMFUL TO AQUATIC LIFE AT LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Fouling to shoreline. Notify local health and wildlife officials. Notify operators of local water intakes.</p>

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
 Dilute and disperse
 Contain
 Collection Systems: Skim
 Do not burn
 Clean shore line
 Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 37; Nitriles
 2.2 **Formula:** C₃H₅CN
 2.3 **IMO/UN Designation:** 3.2/2404
 2.4 **DOT ID No.:** 2404
 2.5 **CAS Registry No.:** 107-12-0
 2.6 **NAERG Guide No.:** 131
 2.7 **Standard Industrial Trade Classification:** 51484

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wear appropriate approved respirator, chemical resistant gloves, rubber boots, safety goggles, and full protective clothing.
- 3.2 **Symptoms Following Exposure:** Dizziness, rapid respirations, headache, drowsiness, drop in blood pressure, and pulse, delayed symptoms. May cause cyanosis (blue-grey coloration of skin and lips caused by lack of oxygen).
- 3.3 **Treatment of Exposure:** INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing difficult, give oxygen. EYES: Hold eyelids open and flush with water for 15 minutes. INGESTION: If victim is conscious, have victim drink water or milk and have victim induce vomiting. If victim is unconscious, do nothing except keep victim warm. Call for medical aid. SKIN: Remove contaminated clothes and shoes. Wash affected areas with plenty of water.
- 3.4 **TLV-TWA:** Not listed.
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 4; LD₅₀ = 36 mg/kg (mouse)
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Currently not available
 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause severe irritation of eyes and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations.
 3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.
 3.12 **Odor Threshold:** Currently not available
 3.13 **IDLH Value:** Not listed.
 3.14 **OSHA PEL-TWA:** Not listed.
 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:** 36°F C.C.
 4.2 **Flammable Limits in Air:** LEL 3.1%
 4.3 **Fire Extinguishing Agents:** Water spray or mist, foam, CO₂, dry chemical.
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
 4.5 **Special Hazards of Combustion Products:** Toxic fumes of CN and NO_x.
 4.6 **Behavior in Fire:** Currently not available
 4.7 **Auto Ignition Temperature:** Currently not available
 4.8 **Electrical Hazards:** Currently not available
 4.9 **Burning Rate:** Currently not available
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 25.0 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 6.5 (calc.)
 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
 5.2 **Reactivity with Common Materials:** No reaction
 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:** Currently not available
 6.2 **Waterfowl Toxicity:** Currently not available
 6.3 **Biological Oxygen Demand (BOD):** Currently not available
 6.4 **Food Chain Concentration Potential:** Currently not available
 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: 0
 Damage to living resources: 2
 Human Oral hazard: 3
 Human Contact hazard: II
 Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Currently not available
 7.2 **Storage Temperature:** Currently not available
 7.3 **Inert Atmosphere:** Currently not available
 7.4 **Venting:** Currently not available
 7.5 **IMO Pollution Category:** C
 7.6 **Ship Type:** 2
 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Flammable Liquid
 8.2 **49 CFR Class:** 3
 8.3 **49 CFR Package Group:** II
 8.4 **Marine Pollutant:** No
 8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|----------------------|----------------|
| Health Hazard (Blue) | 4 |
| Flammability (Red) | 3 |
| Instability (Yellow) | 1 |
- 8.6 **EPA Reportable Quantity:** 100 pounds
 8.7 **EPA Pollution Category:** B
 8.8 **RCRA Waste Number:** P101
 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
 9.2 **Molecular Weight:** 55.08
 9.3 **Boiling Point at 1 atm:** 207.1°F = 97.3°C = 370.5°K
 9.4 **Freezing Point:** -135°F = -92.8°C = 180°K
 9.5 **Critical Temperature:** 555.4°F = 290.8°C = 564°K
 9.6 **Critical Pressure:** 607.1 psia = 41.3 atm = 4.2 MN/m²
 9.7 **Specific Gravity:** 0.702 at 20°C
 9.8 **Liquid Surface Tension:** 27.2 dyne/cm at 20°C
 9.9 **Liquid Water Interfacial Tension:** Currently not available
 9.10 **Vapor (Gas) Specific Gravity:** 1.9
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
 9.12 **Latent Heat of Vaporization:** 241.7 Btu/lb = 134.3 cal/g = 5.6 x 10⁵ J/kg
 9.13 **Heat of Combustion:** -1,491.5 Btu/lb = -82.86 cal/g = -347 x 10³ J/kg
 9.14 **Heat of Decomposition:** Currently not available
 9.15 **Heat of Solution:** Currently not available
 9.16 **Heat of Polymerization:** Currently not available
 9.17 **Heat of Fusion:** Currently not available
 9.18 **Limiting Value:** Currently not available
 9.19 **Reid Vapor Pressure:** 1.7 psia

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
68	48.810		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

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
	C U R R E N T L Y	-30	0.025		C U R R E N T L Y	0	0.314
		-20	0.033			25	0.321
		-10	0.043			50	0.328
		0	0.056			75	0.334
		10	0.073			100	0.342
		20	0.095			125	0.349
		30	0.123			150	0.356
		40	0.160			175	0.363
		50	0.209			200	0.371
		60	0.272			225	0.379
		70	0.354			250	0.387
		80	0.461			275	0.395
		90	0.600			300	0.403
		100	0.781			325	0.412
		110	1.016			350	0.420
		120	1.323			375	0.429
		130	1.722			400	0.438
		140	2.241			425	0.447
		150	2.917			450	0.457
		160	3.797			475	0.466
		170	4.942			500	0.476
		180	6.433			525	0.486
		190	8.373			550	0.496
		200	10.899			575	0.507
						600	0.517