

# ISOBUTYRONITRILE

IBN

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b>		Liquid	Colorless	Almond-like
IBN Isopropyl cyanide 2-Methylpropanenitrile 2-Methylpropanionitrile		Floats on water. Flammable vapor is produced.		
<p><b>Evacuate.</b>  <b>KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID AND VAPOR.</b>  Wear goggles and self-contained breathing apparatus.  Shut off ignition sources and call fire department.  Stay upwind and use water spray to "knock down" vapor.  Notify local health and pollution control agencies.</p>				
<b>Fire</b>	<b>FLAMMABLE.</b> Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Combat fires from safe distance or protected location. Extinguish with dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.			
<b>Exposure</b>	<b>CALL FOR MEDICAL AID.</b>  <b>VAPOR</b> <b>POISONOUS IF INHALED.</b> Irritating to eyes, nose and throat. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  <b>LIQUID</b> <b>POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED.</b> Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. <b>IF IN EYES,</b> hold eyelids open and flush with plenty of water. <b>IF SWALLOWED</b> and victim is <b>CONSCIOUS,</b> have victim drink water or milk.			
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. 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  
Contain  
Collection Systems: Skim  
Chemical and Physical Treatment:  
Absorb  
Clean shore line

### 2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.  
2.2 **Formula:** (CH<sub>3</sub>)<sub>2</sub>CHCN  
2.3 **IMO/UN Designation:** Not listed  
2.4 **DOT ID No.:** 2284  
2.5 **CAS Registry No.:** 78-82-0  
2.6 **NAERG Guide No.:** 131  
2.7 **Standard Industrial Trade Classification:** 51484

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus; goggles; rubber gloves  
3.2 **Symptoms Following Exposure:** Inhalation, ingestion, or skin contact causes weakness, headache, confusion, nausea, vomiting; acute cyanide poisoning may result. Contact with eyes causes irritation.  
3.3 **Treatment of Exposure:** Get medical attention following all overexposures to this chemical. Watch for symptoms of cyanide poisoning. **INHALATION:** move patient to fresh air; apply artificial respiration if breathing stops. **INGESTION:** break an amyl nitrite pearl in a cloth and hold lightly under patient's nose for 15 sec.; if conscious, induce vomiting and repeat until vomit is clear; repeat inhalation of amyl nitrite 5 times at 15-sec. intervals. **EYES:** flush with water for at least 15 min. **SKIN:** flush with water; remove contaminated clothing; destroy contaminated shoes.  
3.4 **TLV-TWA:** Not listed.  
3.5 **TLV-STEL:** Not listed.  
3.6 **TLV-Ceiling:** Not listed.  
3.7 **Toxicity by Ingestion:** Grade 3; oral LD<sub>50</sub> = 100 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:** 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 AEG1:** Not listed

### 4. FIRE HAZARDS

- 4.1 **Flash Point:** 47°F C.C.  
4.2 **Flammable Limits in Air:** Currently not available  
4.3 **Fire Extinguishing Agents:** Dry chemical, foam, carbon dioxide  
4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.  
4.5 **Special Hazards of Combustion Products:** Toxic oxides of nitrogen may form in fire.  
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:** 32.1 (calc.)  
4.12 **Flame Temperature:** Currently not available  
4.13 **Combustion Molar Ratio (Reactant to Product):** 8.5 (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:** Currently not available  
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:** None  
6.5 **GESAMP Hazard Profile:**  
Bioaccumulation: 0  
Damage to living resources: -  
Human Oral hazard: 3  
Human Contact hazard: II  
Reduction of amenities: XXX

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical; Pure  
7.2 **Storage Temperature:** Ambient  
7.3 **Inert Atmosphere:** No requirement  
7.4 **Venting:** Open  
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:** 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:** Not listed  
8.6 **EPA Reportable Quantity:** Not listed.  
8.7 **EPA Pollution Category:** Not listed.  
8.8 **RCRA Waste Number:** Not listed  
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:** 69.1  
9.3 **Boiling Point at 1 atm:** 219°F = 104°C = 377°K  
9.4 **Freezing Point:** Not pertinent  
9.5 **Critical Temperature:** Currently not available  
9.6 **Critical Pressure:** Currently not available  
9.7 **Specific Gravity:** 0.774 at 20°C (liquid)  
9.8 **Liquid Surface Tension:** 24.9 dynes/cm = 0.0249 N/m at 20°C  
9.9 **Liquid Water Interfacial Tension:** Currently not available  
9.10 **Vapor (Gas) Specific Gravity:** 2.4  
9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available  
9.12 **Latent Heat of Vaporization:** 200 Btu/lb = 110 cal/g = 4.7 X 10<sup>2</sup> J/kg  
9.13 **Heat of Combustion:** -14,960 Btu/lb = -8,310 cal/g = -348 X 10<sup>2</sup> J/kg  
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:** 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
67	48.250		N O T  P E R T I N E N T		N O T  P E R T I N E N T	52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86	0.581 0.573 0.564 0.556 0.548 0.540 0.532 0.524 0.517 0.510 0.502 0.495 0.489 0.482 0.475 0.469 0.463 0.457

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
	I N S O L U B I L E	125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220	1.697 1.936 2.204 2.504 2.838 3.211 3.625 4.084 4.593 5.155 5.777 6.461 7.214 8.041 8.948 9.941 11.030 12.210 13.500 14.910	125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220	0.01868 0.02114 0.02386 0.02688 0.03021 0.03390 0.03796 0.04242 0.04733 0.05270 0.05859 0.06502 0.07203 0.07967 0.08798 0.09700 0.10680 0.11740 0.12890 0.14120		N O T  P E R T I N E N T