

ISO-AMYL NITRITE

ANI

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Liquid	Colorless to light yellow	Pleasant fruity odor
Amyl nitrite Isopentyl nitrite 3-Methylbutyl nitrite		Floats on water. Poisonous gas is produced on contact with water.		
<p>Shut off ignition sources. Call fire department. Wear goggles, self-contained breathing apparatus and rubber overclothing (including gloves). Avoid contact with liquid. Keep people away. Stop discharge if possible. Evacuate. Isolate and remove discharged material. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	<p>FLAMMABLE. POISONOUS GASES ARE PRODUCED IN FIRE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. DO NOT USE WATER ON FIRE. Cool exposed containers with water.</p>			
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR POISONOUS IF INHALED. Irritating to eyes, nose and throat. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Will burn skin and eyes. If swallowed will cause dizziness, headache or loss of consciousness. 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. DO NOT INDUCE VOMITING.</p>			
Water Pollution	<p>Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>			

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Collection Systems: Skim
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed
2.2 Formula: (CH₃)₂CHCH₂CH₂ONO
2.3 IMO/UN Designation: 3.1/1113
2.4 DOT ID No.: 1113
2.5 CAS Registry No.: 463-04-7
2.6 NAERG Guide No.: 129
2.7 Standard Industrial Trade Classification: 51489

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Protective goggles or face shield; self-contained breathing apparatus; protective gloves and clothing.
- 3.2 **Symptoms Following Exposure:** Inhalation or ingestion causes flushing of the face, pulsatile headache, disturbing tachycardia, cyanosis (methemoglobinemia), weakness, confusion, restlessness, faintness, and collapse. Contact with eyes or skin causes irritation.
- 3.3 **Treatment of Exposure:** INHALATION or INGESTION: place patient in recumbent position; if necessary, administer oxygen. For treatment of severe methemoglobinemia, transfuse with whole blood or give I.V. or I.M. a dose of 1-2 mg/kg methylene blue or an oral dose of 3-5 mg/kg. EYES: after contact with liquid, irrigate with large quantities of water for 15 min.; call physician. SKIN: after contact with liquid, wash with large amounts water. Call physician.
- 3.4 **TLV-TWA:** Not listed.
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
3.7 **Toxicity by Ingestion:** Grade 1; LD₅₀ = 5 to 15 g/kg
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** Methemoglobinemia may occur.
3.10 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to the eyes and throat.
3.11 **Liquid or Solid Characteristics:** Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes.
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:** 0°F O.C.
4.2 **Flammable Limits in Air:** Currently not available
4.3 **Fire Extinguishing Agents:** Dry chemical, alcohol foam, carbon dioxide
4.4 **Fire Extinguishing Agents Not to Be Used:** Water
4.5 **Special Hazards of Combustion Products:** Toxic oxides of nitrogen are formed.
4.6 **Behavior in Fire:** Containers may explode.
4.7 **Auto Ignition Temperature:** 410°F
4.8 **Electrical Hazards:** Currently not available
4.9 **Burning Rate:** 3.4 mm/min.
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** Currently not available
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** Currently not available
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Decomposes on exposure to air, light, or water, evolving toxic oxides of nitrogen which are orange in color.
5.2 **Reactivity with Common Materials:** May corrode metals if wet.
5.3 **Stability During Transport:** Stable if kept sealed and not exposed to light.
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: 2
Human Contact hazard: -
Reduction of amenities: -

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial; USP
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Pressure-vacuum
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:**
- | Category | Classification |
|----------------------|----------------|
| Health Hazard (Blue) | 1 |
| Flammability (Red) | - |
| Instability (Yellow) | 2 |
- 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:** 117.1
9.3 **Boiling Point at 1 atm:** 210°F = 99°C = 372°K
9.4 **Freezing Point:** Not pertinent
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 0.8758 at 20°C (liquid)
9.8 **Liquid Surface Tension:** (est.) 20 dynes/cm = 0.020 N/m at 20°C
9.9 **Liquid Water Interfacial Tension:** (est.) 40 dynes/cm = 0.040 N/m at 20°C
9.10 **Vapor (Gas) Specific Gravity:** 4
9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.0709
9.12 **Latent Heat of Vaporization:** 212 Btu/lb = 118 cal/g = 4.94 X 10⁵ J/kg
9.13 **Heat of Combustion:** -12,500 Btu/lb = -6,930 cal/g = -290 X 10³ 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
45	55.520	51	0.450	51	0.804	45	0.542
50	55.310	52	0.450	52	0.804	50	0.524
55	55.110	53	0.450	53	0.804	55	0.507
60	54.900	54	0.450	54	0.804	60	0.490
65	54.700	55	0.450	55	0.804	65	0.475
70	54.490	56	0.450	56	0.804	70	0.460
75	54.290	57	0.450	57	0.804	75	0.447
80	54.080	58	0.450	58	0.804	80	0.433
85	53.880	59	0.450	59	0.804	85	0.421
90	53.680	60	0.450	60	0.804	90	0.409
95	53.480	61	0.450	61	0.804	95	0.397
100	53.270	62	0.450	62	0.804	100	0.386
105	53.070	63	0.450	63	0.804	105	0.376
110	52.870	64	0.450	64	0.804	110	0.366
115	52.670	65	0.450	65	0.804	115	0.356
120	52.470	66	0.450	66	0.804	120	0.347
125	52.280	67	0.450	67	0.804	125	0.338
130	52.080	68	0.450	68	0.804		
135	51.880						
140	51.680						
145	51.490						
150	51.290						
155	51.100						
160	50.900						
165	50.710						
170	50.510						

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	70	0.101	70	0.00209	0	0.256
	N	80	0.158	80	0.00319	10	0.256
	S	90	0.241	90	0.00479	20	0.256
	O	100	0.363	100	0.00708	30	0.256
	L	110	0.539	110	0.01032	40	0.256
	U	120	0.789	120	0.01486	50	0.256
	B	130	1.141	130	0.02111	60	0.256
	L	140	1.630	140	0.02964	70	0.256
	E	150	2.300	150	0.04115	80	0.256
		160	3.210	160	0.05651	90	0.256
		170	4.433	170	0.07679	100	0.256
		180	6.060	180	0.10330	110	0.256
		190	8.205	190	0.13780	120	0.256
		200	11.010	200	0.18200	130	0.256
		210	14.640	210	0.23850	140	0.256
		220	19.300	220	0.30980	150	0.256
		230	25.250	230	0.39940	160	0.256
		240	32.780	240	0.51110	170	0.256