

NITROUS OXIDE

NTO

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms Dinitrogen monoxide Laughing gas	Gas	Colorless	Odorless or mild sweet odor Sinks and boils in water. Visible vapor cloud is produced.
Evacuate. Keep people away. Avoid contact with liquid. Avoid inhalation. Shut off ignition sources and call fire department. Notify local health and pollution control agencies.			
Fire	Not flammable but will intensify fires.		
Exposure	Call for medical aid. VAPOR If inhaled will cause dizziness, difficult breathing, or loss of consciousness. Move victim to fresh air. If breathing is difficult, give oxygen. LIQUID Will cause frostbite. Flush affected areas with plenty of water. DO NOT RUB AFFECTED AREAS.		
Water Pollution	Not harmful to aquatic life.		

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS	3. HEALTH HAZARDS	4. FIRE HAZARDS	5. CHEMICAL REACTIVITY	6. WATER POLLUTION	7. SHIPPING INFORMATION	
Stop discharge	2.1 CG Compatibility Group: Not listed. 2.2 Formula: N ₂ O 2.3 IMO/UN Designation: 2/1070 2.4 DOT ID No.: 1070 2.5 CAS Registry No.: 10024-97-2 2.6 NAERG Guide No.: 122 2.7 Standard Industrial Trade Classification: 52239	3.1 Personal Protective Equipment: Self-contained breathing apparatus for high vapor concentrations 3.2 Symptoms Following Exposure: Inhalation causes intense analgesia; concentrations of over 40-60% cause loss of consciousness preceded by hysteria. Contact of liquid with eyes or skin causes frostbite burn. 3.3 Treatment of Exposure: INHALATION: remove to fresh air. EYES: get medical attention for frostbite burn. SKIN: treat frostbite burn; soak in lukewarm water. 3.4 TLV-TWA: 50 ppm. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 0; LD ₅₀ >15 g/kg. 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Causes birth defects in rats; can cause lethal effects in chick eggs 3.10 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to eyes and throat. 3.11 Liquid or Solid Characteristics: No appreciable hazard; practically harmless to the 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	4.1 Flash Point: Not pertinent (nonflammable compressed gas) 4.2 Flammable Limits in Air: Not pertinent 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: Will support combustion, and may increase intensity of fire. Containers may explode when heated. 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	5.1 Reactivity with Water: No reaction 5.2 Reactivity with Common Materials: Supports combustion but does not cause spontaneous ignition. 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	6.1 Aquatic Toxicity: None 6.2 Waterfowl Toxicity: None 6.3 Biological Oxygen Demand (BOD): None 6.4 Food Chain Concentration Potential: None 6.5 GESAMP Hazard Profile: Not listed	7.1 Grades of Purity: 98.0+%	7.2 Storage Temperature: Ambient 7.3 Inert Atmosphere: No requirement 7.4 Venting: Safety relief 7.5 IMO Pollution Category: Currently not available 7.6 Ship Type: Currently not available 7.7 Barge Hull Type: 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
CURRENTLY NOT AVAILABLE			NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

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
32	0.250	-125 -120 -115 -110 -105 -100 -95 -90 -85 -80 -75 -70 -65 -60 -55 -50 -45 -40	16.510 19.220 22.290 25.740 29.600 33.910 38.700 44.000 49.870 56.330 63.430 71.200 79.690 88.940 99.000 109.900 121.700 134.500	-125 -120 -115 -110 -105 -100 -95 -90 -85 -80 -75 -70 -65 -60 -55 -50 -45 -40	0.20220 0.23200 0.26510 0.30170 0.34210 0.38640 0.43490 0.48790 0.54560 0.60810 0.67580 0.74890 0.82760 0.91220 1.00300 1.10000 1.20300 1.31300	90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260	0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211 0.211