

	MSDS	ISSUE DATE	June-2020
	NITROGEN	WWW.TPCO.IR IRAN/TABRIZ/TABRIZ PETROCHEMICAL COMPANY/P.O.BOX:51745-354/TEL:+984134282612 Page:1/4	

1. Chemical Product And Company Identification:

Product name: nitrogen (liquid)

Chemical name: nitrogen

Formula: N₂

Synonyms: nitrogen gas, gaseous nitrogen

Company identification: IRAN- Tabriz petrochemical company

2. Composition, Information On Ingredients:

Nitrogen is sold as pure product > 99.95% (O₂<10ppm)

CAS number: 7727-37-9

3. Hazards Identification:

Emergency overview:

Nitrogen is a nontoxic, odorless, colorless, nonflammable compressed gas stored in cylinders at high pressure. It can cause rapid suffocation when concentrations are sufficient to reduce oxygen levels below 19.5%. Self contained breathing apparatus (SCBA) may be required.

Potential health effects information:

Inhalation: simple asphyxiate. Nitrogen is nontoxic, but may cause suffocation by displacing the oxygen in air. Lack of sufficient oxygen can cause serious injury or death.

Eye contact: no adverse effect.

Skin contact: no adverse effect.

Exposure information:

Route of entry: inhalation

Target organs: none

Effect: asphyxiation (suffocation)

symptoms: exposure to an oxygen deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help themselves.

Medical conditions aggravated by overexposure: none

Carcinogenic potential: nitrogen is not listed as a carcinogen or potential carcinogen by NTP, IARC, or OSHA.

4. First Aid Measures:

Inhalation: persons suffering from lack of oxygen should be moved to fresh air. If victim is not breathing, administer artificial respiration. If breathing is difficult, administer oxygen. Obtain prompt medical attention.

Eye contact: not applicable.

Skin contact: not applicable.

5. Fire Fighting Measures:

Flash point: not applicable

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Auto ignition: nonflammable

Flammable limits: nonflammable

Extinguishing media: nitrogen is nonflammable and does not support combustion. Use extinguishing media appropriate for the surrounding fire.

Hazardous combustion products: none

Special fire fighting instructions: nitrogen is a simple asphyxiate. If possible, remove nitrogen cylinders from fire area or cool with water. SCBA may be required by rescue workers.

Unusual fire and explosion hazards: upon exposure to intense heat or flame cylinder may vent rapidly and/or rupture violently. Most cylinders are designed to vent contents when exposed to elevated temperatures. Pressure in a container can build up due to heat and it may rupture if pressure relief devices should fail to function.

6. Accidental Release Measures:

Evacuate all personnel from affected area. Increase ventilation to release area and monitor oxygen level. Use appropriate protective equipment (SCBA) if leak is from container or its valve.

Call the air products emergency telephone number. If leak is in user's system close cylinder valve and vent pressure before attempting repairs.

7. Handling and Storage:

Storage: cylinders should be stored upright in a well-ventilated, secure area, protected from the weather. Storage area temperatures should not exceed 125 °f (52 °c) and area should be free of combustible materials. Storage should be away from heavily traveled areas and emergency exits.

Avoid areas where salt or other corrosive materials are present. Valve protection caps and valve outlet seals should remain on cylinders not connected for use. Separate full from empty cylinders.

Avoid excessive inventory and storage time. Use a first-in first-out system. Keep good inventory records.

Handling: do not drags, roll, or slide cylinder. Use a suitable hand truck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times while in use.

Use a pressure reducing regulator or separate control valve to safely discharge gas from cylinder.

Use a check valve to prevent reverse flow into cylinder. Do not overheat cylinder to increase pressure or discharge rate. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve causing a leak to occur. Use a special cap wrench or adjustable strap-wrench to remove over-tight or rusted caps.

Nitrogen is compatible with all common materials of construction. Pressure requirements should be considered when selecting materials and designing systems.

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Caution: users of nitrogen must be aware of the hazards caused by the accumulation of high concentrations, especially in confined spaces. Compliance with OSHA regulations, especially 9 CFR 1910.146 (confined space entry), is essential

8. Exposure Controls, Personal Protection:

Engineering controls: provide good ventilation and/or local exhaust to prevent accumulation of high concentrations of gas. Oxygen levels in work area should be monitored to ensure they do not fall below 19.5%.

Respiratory protection:

General use: none required.

Emergency: use SCBA or positive pressure air line with mask and escape pack in areas where oxygen concentration is less than 19.5%. Air purifying respirators will not provide protection.

Other protective equipment: safety glasses. Safety shoes and leather work gloves are recommended when handling cylinders.

9. Physical and Chemical Properties:

Appearance: colorless gas

Odor: odorless

Molecular weight: 28.01

Boiling point (1 atm): -320.4 °f (-195.8 °c)

Specific gravity (air =1): 0.967

Specific volume (at 70 f (21.1 c) and 1 atm): 13.81 ft³/lb (0.867m³/kg)

Freezing point/melting point: -345.8 °f (-209.9 °c)

Vapor pressure: not applicable at 70 °f

Gas density (at 70 f (21.1 c) and 1 atm): 0.072 lb/ft³ (1.153 kg/m³)

Solubility in water (vol. /vol. at 32°f (0°c)): 0.023

10. Stability and Reactivity:

Chemical stability: stable

Conditions to avoid: none

Incompatibility: none

Hazardous decomposition products: none

Hazardous polymerization: will not occur.

11. Toxicological Information:

Nitrogen is a simple asphyxiate.

12. Ecological Information:

The atmosphere contains approximately 78% nitrogen. No adverse ecological effects are expected. Nitrogen does not contain any class I or class II ozone depleting chemicals.

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13. Disposal Considerations:

Unused product / empty container: return cylinder and unused product to supplier. Do not attempt to dispose of residual or unused quantities.

Disposal: for emergency disposal, secure the cylinder and slowly discharge gas to the atmosphere in a well ventilated area or outdoors.

14. Transport Information:

Dot hazard class: 2.2 - dot shipping label: nonflammable gas

Dot shipping name: nitrogen (liquid)

Special shipping information: cylinders should be transported in a secure upright position in a well ventilated truck. Never transport in passenger compartment of a vehicle.

Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases.

Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of federal law.

15. Regulatory Information:

NFPA ratings:

Health: 0

Flammability: 0

Reactivity: 0

16. Other Information:

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