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**iSOC<sup>®</sup> Technology****Material Safety Data Sheet: Nitrogen**

<b>Product Name:</b> Nitrogen	<b>CAS:</b> 7727-37-9
Nitrogen; Nitrogen, compressed (D.O.T.)	<b>DOT I.D No.:</b> UN 1066
<b>Chemical Name and Synonyms:</b> Nitrogen	<b>DOT Hazard Class:</b> Division 2.2
<b>Formula:</b> N <sub>2</sub>	<b>Chemical Family:</b> Inert Gas

**HEALTH HAZARD DATA****Time Weighted Average Exposure Limit:**

Nitrogen is defined as a simple asphyxiant (ACGIH 1994-1995i; OSHA 1993 PEL (8 Hr. TWA) = None listed.

**Symptoms of Exposure:**

Effects of exposure to high concentrations so as to displace the oxygen in air necessary for life may include any, all or none of the following: • Loss of balance or dizziness • Tightness in the frontal area of the forehead.

**Toxicological Properties:**

- Nitrogen is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.
- Nitrogen is not listed in the LARC, NTP or by OSHA as a carcinogen or potential carcinogen.
- Persons in ill health where such illness would be aggravated by exposure to nitrogen should not be allowed to work with or handle this product.

**Recommended First Aid Treatment:**

Prompt medical attention is mandatory in all cases of overexposure to nitrogen. Rescue personnel should be equipped with self-contained breathing apparatus.

Inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

<b>Hazardous Mixtures of other Liquids, Solids or Gases:</b> None.	
<b>PHYSICAL DATA</b>	
<b>Boiling Point:</b> -320.5°F (-195.8°C)	<b>Liquid Density at Boiling Point:</b> 4.43 lb/ft3 (70.96 kg/m3)
<b>Vapor Pressure @ 70°F (21.1°C)</b> = Above the critical temperature of -232.6°F (-147°C)	<b>Gas Density at 70°F. 1 atm</b> .0725 lb/ft3 (1.161 kg/m3)
<b>Solubility in Water:</b> Very slightly	<b>Freezing Point:</b> -345.9°F (-209.9°C)
<b>Evaporation Rate:</b> N/A (Gas)	<b>Specific Gravity (AIR=1) @ 70°F (21.1°C)</b> = 0.97
<b>Appearance and Odor:</b> Colorless, odorless gas	

## FIRE AND EXPLOSION HAZARD DATA

<b>Flash Point (Method used):</b> N/A Gas	<b>Auto Ignition Temperature:</b> N/A	<b>Flammable Limits % by Volume:</b> LEL N/A UEL N/A
<b>Extinguishing Media:</b> Carbon dioxide, dry chemical		<b>Electrical Classification:</b> Nonhazardous
<b>Special Fire fighting Procedures:</b> Nonflammable inert gas		
<b>Unusual Fire and Explosion Hazards:</b> If cylinders are involved in a fire, safely relocate or keep cool with water spray.		

## REACTIVITY DATA

**Stability:** Stable

**Incompatibility (Materials to Avoid):** None

**Hazardous Decomposition Products:** None

**Hazardous Polymerization:** Will not occur

**Conditions to Avoid:** None

## **SPILL OR LEAK PROCEDURES**

### **Steps to be taken in case material is released or spilled:**

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

### **Waste disposal methods:**

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

## **SPECIAL PROTECTION INFORMATION**

**Respiratory Protection (Specify type):** Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.

**Ventilation:** See Local Exhaust

**Protective Gloves:** Any material

**Eye Protection:** Safety goggles or glasses

**Other Protective Equipment:** Safety shoes

## **SPECIAL PRECAUTIONS**

### **Special Labeling Information:**

DOT Shipping Name: Nitrogen, Compressed

DOT Hazard Class: Division 2.2

DOT Shipping Label: Nonflammable Gas

I.D. No.: UN 1066

### **Special Handling Recommendation:**

Use only in well-ventilated areas. Valve protection caps must remain in place unless cylinder is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and Safety Bulletin SB-2.

**Special Storage Recommendations:**

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125F (52C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in -first out" inventory system to prevent full cylinders being stored for excessive periods of time. For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and Safety Bulletin SB-2.

**Other Recommendations or Precautions:**

Compressed gas cylinders should 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 his (written) consent is a violation of Federal Law (49CFR).

**Special Packaging Recommendations:**

Nitrogen is non-corrosive and may be used with any common structural materials.

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