

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.

MATERIAL SAFETY DATA SHEET (MSDS)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Nitrogen, compressed

CHEMICAL NAME: Nitrogen

CHEMICAL FAMILY: Inert gas

FORMULA: N₂

SYNONYMS: Nitrogen

NAME AND ADDRESS:

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.
3316 National Avenue
San Diego, CA 92113

TELEPHONE:

Emergency Phone: (800) 633-8253 (24 hr.)
Routine information call: (619) 234-6750
Weekdays 7:30 AM – 5:00 PM

[USE]: Various, inerting, medical, instrumentation:

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME /CAS NUMBER	PERCENTAGE	OSHA PEL	ACGIH TLV
NITROGEN/7727-37-9	>99%	None	Simple Asphyxiant

[LD₅₀]: None. [LC₅₀]: None.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

CAUTION! High pressure gas.
Can cause rapid suffocation.
Do not breathe gas.
Self contained breathing apparatus may be required by rescue workers.

POTENTIAL HEALTH EFFECTS INFORMATION:

ROUTES OF EXPOSURE:

INHALATION: Simple asphyxiant. Nitrogen is nontoxic, but may cause suffocation by displacing the oxygen in air. Exposure to 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 or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

EYE CONTACT: Not applicable.

SKIN CONTACT: Not applicable.

[SKIN ABSORPTION]: Not applicable.

[INGESTION]: Not applicable.

CHRONIC EFFECTS: None established.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None

OTHER EFFECTS OF OVEREXPOSURE: None.

CARCINOGENICITY: Nitrogen is not listed by NTP, OSHA or IARC.

4. FIRST AID MEASURES

INHALATION: Persons suffering from lack of oxygen should be removed 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.

INGESTION: Not applicable.

NOTES TO PHYSICIAN: None.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION: Nonflammable.

FLAMMABLE LIMITS IN AIR BY VOLUME:

LOWER: Not applicable. **UPPER:** Not applicable.

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.

EXTINGUISHING MEDIA: Nitrogen is nonflammable and does not support combustion. Use extinguishing media appropriate for the surrounding fire.

SPECIAL FIRE FIGHTING INSTRUCTIONS: Nitrogen is a simple asphyxiant. If possible, remove nitrogen cylinders from fire area or cool with water. Self-contained breathing apparatus may be required for 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.

HAZARDOUS COMBUSTION PRODUCTS: None known.

[SENSITIVITY TO STATIC DISCHARGE]: None

[SENSITIVITY TO MECHANICAL IMPACT]: None

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Evacuate all personnel from the affected area. Shut off source of nitrogen, if without risk. Ventilate enclosed areas or remove cylinders to an outdoor location. If leaking from cylinder or its valve, contact your supplier.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN STORAGE: Store and use with adequate ventilation. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling or being knocked over. Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 125° F (52° C). Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time.

PRECAUTIONS TO BE TAKEN IN HANDLING: Use a suitable hand truck for cylinder movement. Never attempt to lift a cylinder by its valve protection cap. 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 an adjustable strap wrench to remove over-tight or rusted caps. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. For additional precautions in using nitrogen see Section 16 - Other Information.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**ENGINEERING CONTROLS:**

VENTILATION: Natural or mechanical to prevent oxygen deficient atmospheres under 19.5% oxygen.

RESPIRATORY PROTECTION (SPECIFY TYPE):

General Use: None required.

Emergency Use: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen deficient atmosphere. Air purifying respirators will not provide protection.

PROTECTIVE GLOVES: Work gloves are recommended when handling cylinders.

EYE PROTECTION: Safety glasses are recommended when handling cylinders.

OTHER PROTECTIVE EQUIPMENT: Safety shoes are recommended when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

MOLECULAR WEIGHT: 28.01

BOILING POINT (1 ATM): -320.4° F (-195.8° C)

SPECIFIC GRAVITY (Air =1): At 70° F (21.1° C) and 1 atm: 0.967

FREEZING POINT/MELTING POINT: At 1 atm: -345.8° F (-209.9° C)

VAPOR PRESSURE (AT 20° C): Not applicable

GAS DENSITY: At 70° F (21.1° C) and 1 atm: 0.072 lbs/cu ft (1.153 kg/m³)

EVAPORATION RATE (Butyl Acetate=1): Gas, not applicable.

SOLUBILITY IN WATER: Vol/Vol at 32° F (0° C): 0.023

EXPANSION RATIO: Not applicable.

[pH]: Not applicable

APPEARANCE, ODOR AND STATE: Colorless, odorless, and tasteless gas at normal temperature and pressure.

[COEFFICIENT OF WATER/OIL DISTRIBUTION]: Not available

[ODOR THRESHOLD]: Not applicable

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: None

INCOMPATIBILITY (Materials to Avoid): None

REACTIVITY:

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.

- A) **HAZARDOUS DECOMPOSITION PRODUCTS:** None
- B) **HAZARDOUS POLYMERIZATION:** Will not occur.

11. TOXICOLOGICAL INFORMATION

Nitrogen is a simple asphyxiant.

[IRRITANCY OF MATERIAL]: None.

[SENSITIZATION TO MATERIAL]: None.

[REPRODUCTIVE EFFECTS]: None.

[TERATOGENICITY]: None.

[MUTAGENICITY]: None.

[SYNERGISTIC MATERIALS]: None

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 (40 CFR Part 82). Nitrogen is not listed as a marine pollutant by DOT (49 CFR Part 171).

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

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

14. TRANSPORT INFORMATION

DOT/IMO SHIPPING NAME: Nitrogen, Compressed

HAZARD CLASS: 2.2 (Nonflammable Gas)

IDENTIFICATION NUMBER: UN 1066

[PIN]: 1066

PRODUCT RQ: Not applicable

SHIPPING LABEL(s): Nonflammable gas.

PLACARD (When required): Nonflammable gas.

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards and should be discouraged.

15. REGULATORY INFORMATION

The following information concerns selected regulatory requirements potentially applicable to this product. Not all such requirements are identified. Users of this product are responsible for their own regulatory compliance on a federal, state [provincial], and local level.

U.S. FEDERAL REGULATIONS:

EPA - ENVIRONMENTAL PROTECTION AGENCY

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR Parts 117 and 302):

Reportable Quantity (RQ): None

SARA: Superfund Amendment and Reauthorization Act

SECTION 302/304: Requires emergency planning on threshold planning quantities (TPQ) and release reporting based on reportable quantities (RQ) of EPA's extremely hazardous substances (40 CFR Part 355).

Extremely Hazardous Substances: None

Threshold Planning Quantity (TPQ): None

SECTIONS 311/312: Require submission of material safety data sheets (MSDSs) and chemical inventory reporting with identification of EPA defined hazard classes (40 CFR Part 370). The hazard classes for this product are:

IMMEDIATE:	No	PRESSURE:	Yes
DELAYED:	No	REACTIVITY:	No
		FIRE:	No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Nitrogen does not require reporting under Section 313

40 CFR PART 68: Risk Management for Chemical Accidental Release. Requires the development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

Nitrogen is not listed as a regulated substance.

TSCA: Toxic Substance Control Act: Nitrogen is listed on the TSCA inventory.

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119: Process Safety Management of Highly Hazardous Chemicals. Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals as listed in Appendix A.

Nitrogen is not listed in Appendix A as a highly hazardous chemical.

STOODY INDUSTRIAL AND WELDING SUPPLY, INC.**FDA - FOOD AND DRUG ADMINISTRATION**

21CFR 184.1540: Generally recognized as safe (GRAS) as a direct human food ingredient when used as a propellant, aerating agent and gas. Nitrogen NF is regulated by the FDA as a prescription drug.

[CANADIAN REGULATIONS:]

[Controlled Product Hazard Class A. This MSDS has been prepared in compliance with Controlled Product Regulations.]

16. OTHER INFORMATION

SPECIAL PRECAUTIONS: Use piping and equipment adequately designed to withstand pressures to be encountered. Use a check valve or other protective apparatus in any line or piping from the cylinder to prevent reverse flow.

Shipment of compressed gas cylinders which have not been filled with the owners consent is a violation of Federal law (49 CFR Part 173.301(b)).

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist, or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

OTHER INFORMATION:**NFPA RATINGS:**

HEALTH: = 0

FLAMMABILITY: = 0

REACTIVITY: = 0

SPECIAL: = SA (CGA recommends this to designate simple asphyxiant)

HMIS RATINGS:

HEALTH: = 0

FLAMMABILITY: = 0

REACTIVITY: = 0

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

THREADED:	0-3000 psig	CGA 580
	3001-5500 psig	CGA 680
	5501-7500 psig	CGA 677
PIN-INDEXED YOKE:	0-3000 psig	CGA 960 (Medical Use)
ULTRA HIGH INTEGRITY	0-3000 psig	CGA 718

Use the proper CGA connections, DO NOT USE ADAPTERS

Further information about nitrogen can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703)412-0900.

<i>G-10.1</i>	<i>"Commodity Specification for Nitrogen"</i>
<i>P-9</i>	<i>"Inert Gases--Argon, Nitrogen, and Helium"</i>
<i>P-14</i>	<i>"Accident Prevention in Oxygen-Rich, Oxygen-Deficient Atmospheres"</i>
<i>SB-2</i>	<i>"Oxygen Deficient Atmospheres"</i>
<i>AV-1</i>	<i>"Safe Handling and Storage of Compressed Gases"</i>

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[Includes revisions made 1/3/97]