

Safety Data Sheet

Nitrogen, refrigerated liquid

US Cylinder Gas
Alsip, IL



Section 1: Product and Company Identification

US Cylinder Gas
Alsip, IL

Product Code: **Liquid Nitrogen**

Part Number: Nitrogen Liquid

Synonyms: Liquid N2, Cryogenic N2

Recommended Use: Industrial use. Medical applications. Food applications. Specialty Use. Use as directed

Usage Restrictions:

Section 2: Hazards Identification



Warning

Hazard Classification:

Gases Under Pressure, H281
Simple Asphyxiant, OSHA-H01

Hazard Statements:

H281: Contains refrigerated gas; may cause cryogenic burns or injury.

CGA-HG01: MAY CAUSE FROSTBITE.

OSHA-H01: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary Statements

P202: Do not handle until all safety precautions have been read and understood.

P262: Do not get in eyes, on skin, or on clothing.

P280: Wear protective gloves, protective clothing, eye protection, and/or face protection.

P282: Wear cold insulating gloves, face shield, and eye protection.

P403: Store in a well-ventilated place.

CGA-PG05: Use a back flow preventive device in the piping.

CGA-PG06: Close valve after each use and when empty.
 CGA-PG10+CGA-PG20: Use only with equipment of compatible materials of construction and rated for cylinder pressure.
 CGA-PG12: Do not open valve until connected to equipment prepared for use.
 CGA-PG23: Always keep container in upright position.
 CGA-PG24: DO NOT change or force fit connections.
 CGA-PG27: Read and follow the Safety Data Sheet (SDS) before use.

Section 3: Composition/Information on Ingredients

CAS #
7727-37-9

Chemical Substance	Chemical Family	Trade Names
NITROGEN, CRYOGENIC LIQUID	Inorganic gases	NITROGEN, REFRIGERATED LIQUID; NITROGEN, REFRIGERATED LIQUID, CRYOGENIC LIQUID; NITROGEN; NITROGEN (LIQUID); LIQUID NITROGEN; UN 1977

Section 4: First Aid Measures

IF ON SKIN: Get immediate medical advice/attention. Thaw frosted parts with lukewarm water. Do not rub affected area.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media:

Use suitable extinguishing material for surrounding fire.

Protection of Firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Products of Combustion
Non-flammable

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	No significant effects from contamination expected.	Stop leak if possible without personal risk.

Methods for Cleanup	Other Information
N/A	N/A

Section 7: Handling and Storage

Handling	Storage
Keep separated from incompatible substances. Store and use with adequate ventilation. Store away from heat and flame. Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Protect containers from physical damage; do not drag, roll, slide or drop. Always use personal protective equipment including, cold insulating clothing, and splash resistant goggles. Close the container valve after each use; keep closed even when empty. Always use hand truck to transport cylinders.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
ACGIH (simple asphyxiant)

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	Wear appropriate protective, cold insulating clothing. Wear insulated gloves.	Respiratory protection may be needed for frequent or heavy exposure.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor
Gas	Clear	Colorless	N/A	Liquefied Gas	Odorless

Taste	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits
Tasteless	Not flammable	Not available	Not available	Nonflammable	Nonflammable

Lower Explosive Limits	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity
Nonflammable	-321 F (-196 C)	-346 F (-210 C)	760 mmHg @ -196 C	0.967 (Air=1)	Not applicable

Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity	Molecular Weight
1.6% @ 20 C	Not applicable	Not available	Not applicable	0.01787 cP @ 27 C	28.0134

Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
N2	1.2506 g/L	Not available	100%	1	Soluble : Soluble: liquid ammonia Slightly Soluble: alcohol

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.	Metals, oxidizing materials

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Oxides of nitrogen	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
Not available	Not available	Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma

Eye Irritation	Skin Irritation	Sensitization
Frostbite, blurred vision	Blisters, frostbite	Difficulty breathing

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not hazardous	Not available	Not available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Nitrogen, refrigerated liquid	UN1977	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Nitrogen, refrigerated liquid	UN1977	2.2	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
Not determined.

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

NFPA Rating
HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=SA

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard