



# Safety Data Sheet

5% HELIUM, 5% NITROGEN, 0.05% CO2 IN ARGON CERTIFIED

## Section 1: Product and Company Identification

**Purity Cylinder Gases, Inc.**  
2580 28th St SW  
Wyoming, MI 49519  
P: (616)532-2375  
www.puritygas.com

Product Code: 5% HELIUM, 5% NITROGEN, 0.05% CO2 IN ARGON CERTIFIED

Part Number: SP AHNC

**Synonyms:**

**Recommended Use:**

**Usage Restrictions:**

## Section 2: Hazards Identification



**Warning**

**Hazard Classification:**

Gases Under Pressure

**Hazard Statements:**

Contains gas under pressure; may explode if heated

**Precautionary Statements**

**Storage:**

Protect from sunlight.

Store in well-ventilated place.

## Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Helium	7440-59-7	5
Nitrogen	7727-37-9	5

	CAS #	Concentration
Carbon Dioxide	124-38-9	0.05
Argon	7440-37-1	balance

	Chemical Substance	Chemical Family	Trade Names
Helium	HELIUM	Inorganic gases	HELIUM GAS; HELIUM COMPRESSED; HELIUM-4; ATOMIC HELIUM; UN 1046; He
Nitrogen	NITROGEN, COMPRESSED GAS	Inorganic gases	DIATOMIC NITROGEN; DINITROGEN; NITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2
Carbon Dioxide	CARBON DIOXIDE, GAS	Inorganic gases	CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE; UN 1013; CO2
Argon	ARGON, COMPRESSED	Inorganic gases	ARGON; UN 1006; AR

## Section 4: First Aid Measures

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Helium	Wash exposed skin with soap and water.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Nitrogen	Wash exposed skin with soap and water.	Flush eyes with plenty of water.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Carbon Dioxide	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Do not induce vomiting.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Argon	Not applicable route of exposure	Flush eyes with plenty of water.	Not applicable route of exposure	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

## Section 5: Fire Fighting Measures

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Helium	Non-flammable. Use suitable extinguishing media for surrounding fire.	Non-flammable	<ul style="list-style-type: none"> <li>▪ Non-flammable</li> <li>▪ Non-flammable</li> </ul>
Nitrogen	Non-flammable. Use suitable extinguishing media for surrounding fire. Cylinders may rupture or explode if exposed to heat.	Non-flammable	<ul style="list-style-type: none"> <li>▪ Respiratory protection may be needed for frequent or heavy exposure.</li> </ul>

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
<b>Carbon Dioxide</b>	Non-flammable	Non-flammable	<ul style="list-style-type: none"> <li>▪ Any appropriate escape-type, self-contained breathing apparatus.</li> <li>▪ Non-flammable</li> </ul>
<b>Argon</b>	Non-flammable gas	Not applicable	<ul style="list-style-type: none"> <li>▪ N/A</li> <li>▪ N/A</li> </ul>

## Section 6: Accidental Release Measures

	Personal Precautions	Environmental Precautions	Methods for Containment
<b>Helium</b>	Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	Avoid soil, waterways, drains and sewers	Stop leak if possible without personal risk.
<b>Nitrogen</b>	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.
<b>Carbon Dioxide</b>	Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material.	Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.	Stop leak if possible without personal risk.
<b>Argon</b>	Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.	None known.	Stop leak if possible without personal risk.

	Methods for Cleanup	Other Information
<b>Helium</b>	Stop leak, evacuate area. Contact emergency personnel.	None
<b>Nitrogen</b>	N/A	N/A
<b>Carbon Dioxide</b>	Stop leak, evacuate, remove source of ignition.	None
<b>Argon</b>	Leaks may be detected by a soapy-water solution.	

## Section 7: Handling and Storage

	Handling	Storage
<b>Helium</b>	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Keep separated from incompatible substances.
<b>Nitrogen</b>	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.	Keep separated from incompatible substances.
<b>Carbon Dioxide</b>	Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Store and handle in accordance with all current regulations and standards
<b>Argon</b>	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Avoid using in confined spaces.

## Section 8: Exposure Controls/Personal Protection

	Exposure Guidelines
<b>Helium</b>	HELIUM: ACGIH (simple asphyxiant)
<b>Nitrogen</b>	NITROGEN, COMPRESSED GAS: NITROGEN: ACGIH (simple asphyxiant)
<b>Carbon Dioxide</b>	CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m3) OSHA TWA 10000 ppm (18000 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m3) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m3) NIOSH recommended STEL
<b>Argon</b>	ARGON, COMPRESSED: ARGON: ACGIH (simple asphyxiant)

### Engineering Controls

Handle only in fully enclosed systems.

	Eye Protection	Skin Protection	Respiratory Protection
<b>Helium</b>	Eye protection not required, but recommended.	Protective clothing is not required.	Non-flammable

	Eye Protection	Skin Protection	Respiratory Protection
<b>Nitrogen</b>	Eye protection not required, but recommended.	Protective clothing is not required.	Respiratory protection may be needed for frequent or heavy exposure.
<b>Carbon Dioxide</b>	For the gas: Eye protection not required, but recommended. For the liquid: 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.	For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.	Any appropriate escape-type, self-contained breathing apparatus.
<b>Argon</b>	Eye protection not required, but recommended.	Protective clothing is not required.	N/A

### 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	Taste
<b>Helium</b>	Gas	Colorless	Colorless	N/A	Gas	Odorless	Tasteless
<b>Nitrogen</b>	Gas	Clear	Colorless	N/A	Gas	Odorless	Tasteless
<b>Carbon Dioxide</b>	Gas	Colorless	Colorless	N/A	Gas	Odorless	Acid taste
<b>Argon</b>	Gas	Colorless	Colorless	N/A	Gas	Odorless	Tasteless

	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
<b>Helium</b>	Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable
<b>Nitrogen</b>	Not flammable	Not available	Not available	Nonflammable	Nonflammable	Nonflammable
<b>Carbon Dioxide</b>	Not flammable	Not available	N/A	Nonflammable	Nonflammable	Nonflammable
<b>Argon</b>	Not flammable			Nonflammable	Nonflammable	Nonflammable

	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
<b>Helium</b>	-452 F (-269 C)	-458 F (-272 C) at 26 atm	1719 mmHg at -268 C	0.138 (Air=1)	Not applicable	0.94% at 0 C	Not applicable	Not available	Not applicable	0.02012 cP at 26.8 C
<b>Nitrogen</b>	-321 F (-196 C)	-346 F (-210 C)	760 mmHg @ -196 C	0.967 (Air=1)	Not applicable	1.6% @ 20 C	Not applicable	Not available	Not applicable	0.01787 cP @ 27 C
<b>Carbon Dioxide</b>	Not available	-71 F (-57 C) @ 4000 mmHg	43700 mmHg @ 21 C	1.5 (Air=1)	1.522 @ 21 C	Soluble	3.7 (saturated aqueous solution) @ 101.3 kPa (carbonic acid)	Not available	Not applicable	0.01657 cP @ 0 C
<b>Argon</b>	-303 F (-186 C)	-308 F (-189 C)	500 mmHg @ -190 C	1.38 (Air=1)	Not applicable	3.36% @ 20 C	Not applicable	Not available	Not applicable	0.0225 cP @ 25 C

	Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
<b>Helium</b>	4.0026	He	0.1785 g/L at 0 C	Not available	100%	Not applicable	Insoluble: Not available
<b>Nitrogen</b>	28.0134	N2	1.2506 g/L	Not available	100%	1	Soluble: Liquid ammonia
<b>Carbon Dioxide</b>	44.01	C-O2	0.114	Not available	Not applicable	Not applicable	Soluble: Alcohol, acetone, hydrocarbons, organic solvents
<b>Argon</b>	39.948	AR	1.784 g/L @ 0 C	Not available	100%	Not applicable	Soluble: Organic solvents

## Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
Helium	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	No data available.
Nitrogen	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Metals, oxidizing materials
Carbon Dioxide	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases
Argon	Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	No data available.

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
Helium	Miscellaneous decomposition products	Will not polymerize.
Nitrogen	Oxides of nitrogen	Will not polymerize.
Carbon Dioxide	Carbon monoxide	Will not polymerize.
Argon	No data available.	Will not polymerize.

## Section 11: Toxicology Information

### Acute Effects

	Oral LD50	Dermal LD50	Inhalation
Helium	Not available	Not available	Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, fatigue, dizziness, disorientation, emotional disturbances, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma
Nitrogen	Not available	Not available	Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma
Carbon Dioxide	Not established	Not established	Ringling in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma
Argon	Not established	Not established	Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, dizziness, disorientation, mood swings, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma

	Eye Irritation	Skin Irritation	Sensitization
Helium	Liquid: frostbite, blurred vision	Liquid: frostbite	Difficulty breathing
Nitrogen	Contact with rapidly expanding gas may cause burns or frostbite	No information on significant adverse effects	Difficulty breathing
Carbon Dioxide	Irritation, frostbite, blurred vision	Liquid: blisters, frostbite	Difficulty breathing
Argon	No information on significant adverse effects	No information on significant adverse effects	

### Chronic Effects

	Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Helium	Not available	Not available	Not available	No data
Nitrogen	Not hazardous	Not available	Not available	No data
Carbon Dioxide	Not available	Not established	Available.	No data
Argon	Not established	Not established	Not established	No data

## Section 12: Ecological Information

### Fate and Transport

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

	Other toxicity: Not available			
<b>Nitrogen</b>	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
<b>Carbon Dioxide</b>	Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta) Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Relatively non-persistent in the environment. Moderately volatile from water.	Accumulates very little in the bodies of living organisms.	Leaches through the soil
<b>Argon</b>	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

<b>Helium</b>	Dispose in accordance with all applicable regulations.
<b>Nitrogen</b>	Dispose in accordance with all applicable regulations.
<b>Carbon Dioxide</b>	Dispose in accordance with all applicable regulations.
<b>Argon</b>	Dispose in accordance with all applicable regulations.

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

#### DOT Information For This Mixture

<b>Shipping Name</b>	Compressed gas, n.o.s. (Argon, Nitrogen)
<b>UN Number</b>	UN1956
<b>Hazard Class</b>	2.2
<b>Hazard Information</b>	Non-Flammable Gas

#### Individual Component Information

	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
<b>Helium</b>	Helium, compressed	UN1046	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A
<b>Nitrogen</b>	Nitrogen, compressed	UN1066	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A
<b>Carbon Dioxide</b>	Carbon dioxide	UN1013	2.2	Not applicable	2.2	75 kg or L	150kg	None
<b>Argon</b>	Argon, compressed	UN1006	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
<b>Helium</b>	Helium, compressed	UN1046	2.2	Not applicable
<b>Nitrogen</b>	Nitrogen, compressed	UN1066	2.2	Not applicable
<b>Carbon Dioxide</b>	Carbon dioxide	UN1013	2.2	Not applicable
<b>Argon</b>	Argon, compressed	UN1006	2.2	Not applicable

## Section 15: Regulatory Information

### U.S. Regulations

	CERCLA Sections	SARA 355.30	SARA 355.40
Helium	Not regulated.	Not regulated.	Not regulated.
Nitrogen	Not regulated.	Not regulated.	Not regulated.
Carbon Dioxide	Not regulated.	Not regulated.	Not regulated.
Argon	Not regulated.	Not regulated.	Not regulated.

### SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
Helium	Yes	No	No	No	Yes
Nitrogen	Yes	No	No	No	Yes
Carbon Dioxide	Yes	No	No	No	Yes
Argon	Yes	No	No	No	Yes

### SARA 372.65

Helium	Not regulated.
Nitrogen	Not regulated.
Carbon Dioxide	Not regulated.
Argon	Not regulated.

### OSHA Process Safety

Helium	Not regulated.
Nitrogen	Not regulated.
Carbon Dioxide	Not regulated.
Argon	Not regulated.

### State Regulations

	CA Proposition 65
Helium	Not regulated.
Nitrogen	Not regulated.
Carbon Dioxide	Not regulated.
Argon	Not regulated.

### Canadian Regulations

	WHMIS Classification
Helium	A
Nitrogen	A
Carbon Dioxide	A
Argon	A

### National Inventory Status

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

## Section 16: Other Information

	NFPA Rating
Helium	HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=SA
Nitrogen	HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=SA
Carbon Dioxide	HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=SA
Argon	HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=SA

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