

# Safety Data Sheet

## Argon/Hydrogen, compressed

**United States Cylinder Gas**  
11618 S Mayfield Ave, Alsip, Illinois, 60803  
Emergency Phone: CHEMTREC 1-800-424-9300  
www.uscylgas.com

### Section 1: Product and Company Identification

**United States Cylinder Gas**  
11618 S Mayfield Ave, Alsip, Illinois, 60803  
(708) 389-1402  
Emergency Phone: CHEMTREC 1-800-424-9300  
www.uscylgas.com

Product Code: **Argon/Hydrogen**

Part Number: AR/HE Mix, H-5, H-2

**Synonyms:** Argon/Hydrogen mixes

**Recommended Use:** Industrial use. Use as directed.

**Usage Restrictions:**

### Section 2: Hazards Identification



**Hazard Classification:** Flammable (Category 1), H220  
Gases Under Pressure, H280  
Simple Asphyxiant, OSHA-H01

**Hazard Statements:** H220: Extremely flammable gas  
H280: Contains gas under pressure; may explode if heated  
CGA-HG04: MAY FORM EXPLOSIVE MIXTURES WITH AIR.  
CGA-HG08: BURNS WITH INVISIBLE FLAME.  
OSHA-H01: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

**Precautionary Statements**

P202: Do not handle until all safety precautions have been read and understood.  
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P271+P403: Use and store only outdoors or in a well-ventilated place.  
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381: In case of leakage, eliminate all ignition sources.  
CGA-PG02: Protect from sunlight when ambient temperature exceeds 52C (125F).  
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-PG27: Read and follow the Safety Data Sheet (SDS) before use.

### Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Hydrogen	1333-74-0	0.1-5.5%
Argon	7440-37-1	Balance

	Trade Names
Hydrogen	H Hydrogen Molecular hydrogen Dihydrogen Hydrogen atom Atomic hydrogen
Argon	Ar, Argon, Argon-40, Argon36, argon atom, argon(0)

### Section 4: First Aid Measures

IF ON SKIN: wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

### Section 5: Fire Fighting Measures

**Suitable Extinguishing Media:**

Dry powder, carbon dioxide, cool surrounding area with fine water mist.

**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
Hydrogen	Miscellaneous decomposition products
Argon	No data available.

### Section 6: Accidental Release Measures

**Personal Precautions:**

Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

**Environmental Precautions:**

Keep away from drains, surface and ground water. Avoid heat, flames, sparks and other sources of ignition.

**Methods for Containment and Cleanup:**

Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition. If necessary, cover drains.  
Absorb large spills, dispose in appropriate containers.

### Section 7: Handling and Storage

**Handling:**

See precautions in Section 2. Only trained personnel should handle this product. Always use approved personal protective equipment.

**Storage:**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated area. Keep separated from incompatible substances.

	Incompatibilities	Conditions to avoid
Hydrogen	Metals, oxidizing materials, metal oxides, combustible materials, halogens, metal salts, halo carbons, nitrogen trifluoride, oxygen difluoride, magnesium and calcium carbonate, sodium, potassium	Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.
Argon	No data available.	Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

## Section 8: Exposure Controls/Personal Protection

Exposure Guidelines	Threshold Limit Value -TLV (ppm)
Hydrogen	Not Available
Argon	Not Available

**Engineering Controls**

No specific controls are needed.

**Eye Protection**           Wear splash resistant safety goggles.  
**Skin Protection**       Wear chemical protective clothing, including gloves.  
**Respiratory Protection**   Use self-contained breathing apparatus.

**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 / Physical Form	Appearance / Color	Odor	Flash Point	Flammability	Partition Coefficient
Hydrogen	Gas	Colorless	Odorless	Flammable gas (burns at all ambient temperatures)	True	0
Argon	Gas	Colorless	Odorless	Not flammable	False	0

	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits	Boiling Point	Freezing Point	Vapor Pressure
Hydrogen	752 F (400 C)	75	4	-423 F (-253 C)	-434 F (-259 C)	Not Available
Argon	Nonflammable	Not Available	Not Available	-303 F (-186 C)	-308 F (-189 C)	Not Available

	Vapor Density	Specific Gravity	Water Solubility	pH	Evaporation Rate	Viscosity
Hydrogen	0.07	Not applicable	1.82% @ 20 C	0	Not applicable	0.008957 cP @ 26.8 C
Argon	1.38	Not applicable	3.36% @ 20 C	0	Not applicable	0.0225 cP @ 25 C

	Molecular Weight	Molecular Formula	Density	Volatility	Solvent Solubility
Hydrogen	2.016	H <sub>2</sub>	Not Available	Not applicable	Soluble : Not available
Argon	39.95	Ar	Not Available	Not applicable	Soluble : Organic solvents

## Section 10: Stability and Reactivity

	Stability	Conditions to Avoid	Incompatible Materials
Hydrogen	Stable at normal temperatures and pressure.	Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.	Metals, oxidizing materials, metal oxides, combustible materials, halogens, metal salts, halo carbons, nitrogen trifluoride, oxygen difluoride, magnesium and calcium carbonate, sodium, potassium
Argon	Stable at normal temperatures and pressure.	Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.	No data available.

	Hazardous Decomposition Products	Possibility of Hazardous Reactions
Hydrogen	Miscellaneous decomposition products	Will not polymerize.
Argon	No data available.	Will not polymerize.

## Section 11: Toxicology Information

The toxicology information is calculated for the mixture.

### Acute Toxicity Estimates (ATE) of the mixture.

Oral ATE (mg/kg)	Not Available
Inhalation ATE (ppm)	Not Available
Dermal ATE (mg/kg)	Not Available

### Additional health hazards:

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

Skin Corrosion/Irritation	Not Available
Eye Damage/Irritation	Not Available
Respiratory or Skin Sensitization	Not Available
Germ Cell Mutagenicity	Not Available
Carcinogenicity	Not Available
Reproductive Toxicity	Not Available
STOT – single exposure	Not Available
STOT – repeated exposure	Not Available
Aspiration Hazard	Not Available

## Section 12: Ecological Information

### Fate and Transport

	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Hydrogen	Fish toxicity: 0 Invertebrate toxicity: Algal toxicity: Phyto toxicity: Other toxicity:	Not available	Not available	Not available
Argon	Fish toxicity: 0 Invertebrate toxicity: Algal toxicity: Phyto toxicity: Other toxicity:	Not available	Not available	Not available

## Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Do not dispose in sewers or waterways. Recycle if possible to do so. Return to manufacturer for disposal if needed.

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

#### DOT Information For This Mixture

Shipping Name	Compressed gas, flammable, n.o.s. (Hydrogen, Argon)
UN Number	UN1954
Hazard Class	2.1
Hazard Information	FLAMMABLE GAS

#### Individual Component Information

	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Hydrogen	Hydrogen, compressed	UN1049	2.1	Not available	Not available	Not available	Not available
Argon	Argon, Compressed	UN1006	2.2	Not available	Not available	Not available	Not available

### Canadian Transportation of Dangerous Goods

	Shipping Name	UN Number	Class	Packing Group / Risk Group
Hydrogen	Hydrogen, compressed	UN1049	2.1	Not Available
Argon	Argon, Compressed	UN1006	2.2	Not Available

## Section 15: Regulatory Information

### U.S. Regulations

	CERCLA Sections	SARA 355.30	SARA 355.40
Hydrogen	Not Regulated.	Not Regulated.	Not Regulated.
Argon	Not Regulated.	Not Regulated.	Not Regulated.

### SARA 370.21

	Acute	Chronic	Fire	Reactive	Sudden Release
Hydrogen	Yes	No	Yes	No	Yes
Argon	Yes	No	No	No	Yes

### SARA 372.65

Hydrogen	Not Regulated.
Argon	Not Regulated.

### OSHA Process Safety

Hydrogen	Not regulated.
Argon	Not regulated.

### State Regulations

	CA Proposition 65
Hydrogen	Not regulated.
Argon	Not regulated.

### Canadian Regulations

	WHMIS Classification
Hydrogen	A, B1.
Argon	A

National Inventory Status

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

Section 16: Other Information

	NFPA Rating
Hydrogen	Health = 0, Flammability = 4, Instability = 0
Argon	Health = 3 Fire = 0 Reactivity = 0

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