



# Safety Data Sheet

Argon 98% Hydrogen 2%

## 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: Argon 98% Hydrogen 2%

Part Number: AR HY2

**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 |
|----------|-----------|---------------|
| Argon    | 7440-37-1 | 98            |
| Hydrogen | 1333-74-0 | 2             |

|          | Chemical Substance | Chemical Family | Trade Names   |
|----------|--------------------|-----------------|---|
| Argon    | ARGON, COMPRESSED  | Inorganic gases | ARGON; UN 1006; AR  |
| Hydrogen | HYDROGEN           | Inorganic gases | HYDROGEN GAS; HYDROGEN COMPRESSED; HYDROGEN (H2); DIHYDROGEN; UN 1049; H2 |

## Section 4: First Aid Measures

|          | Skin Contact                           | Eye Contact                      | Ingestion  | Inhalation   | Note to Physicians               |
|----------|--|----------------------------------|--|--|----------------------------------|
| 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. |
| Hydrogen | 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. |

## Section 5: Fire Fighting Measures

|          | Suitable Extinguishing Media   | Products of Combustion | Protection of Firefighters   |
|----------|--|------------------------|--|
| Argon    | Non-flammable gas  | Not applicable         | <ul style="list-style-type: none"> <li>N/A</li> <li>N/A</li> </ul>   |
| Hydrogen | Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray. | None known             | <ul style="list-style-type: none"> <li>Any self-contained breathing apparatus with a full facepiece.</li> <li>Any self-contained breathing apparatus with a full facepiece.</li> </ul> |

## Section 6: Accidental Release Measures

|          | Personal Precautions  | Environmental Precautions                                 | Methods for Containment                                     |
|----------|---|---|---|
| Argon    | 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.                |
| Hydrogen | Keep unnecessary people away, isolate hazard area and deny entry. Do not touch spilled material. Ventilate closed spaces before entering. | Avoid heat, flames, sparks and other sources of ignition. | Reduce vapors with water spray. Remove sources of ignition. |

|          | Methods for Cleanup                              | Other Information |
|----------|--|-------------------|
| Argon    | Leaks may be detected by a soapy-water solution. |                   |
| Hydrogen | Stop leak if possible without personal risk.     | None              |

## Section 7: Handling and Storage

|          | Handling   | Storage                                      |
|----------|--|--|
| Argon    | 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.              |
| Hydrogen | Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.              | Keep separated from incompatible substances. |

## Section 8: Exposure Controls/Personal Protection

|          | Exposure Guidelines                                 |
|----------|---|
| Argon    | ARGON, COMPRESSED: ARGON: ACGIH (simple asphyxiant) |
| Hydrogen | HYDROGEN: ACGIH (simple asphyxiant)                 |

### Engineering Controls

Handle only in fully enclosed systems.

|          | Eye Protection                                | Skin Protection                      | Respiratory Protection  |
|----------|---|--------------------------------------|---|
| Argon    | Eye protection not required, but recommended. | Protective clothing is not required. | N/A   |
| Hydrogen | Eye protection not required, but recommended. | Protective clothing is not required. | Any self-contained breathing apparatus with a full facepiece. |

### 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     |
|----------|----------------|------------|-----------|----------------------|---------------|----------|-----------|
| Argon    | Gas            | Colorless  | Colorless | N/A                  | Gas           | Odorless | Tasteless |
| Hydrogen | Gas            | Colorless  | Colorless | N/A                  | Gas           | Odorless | Tasteless |

|          | Flash Point                                       | Flammability  | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|----------|---|---------------|-----------------------|--------------------------|------------------------|------------------------|
| Argon    | Not flammable                                     |               |                       | Nonflammable             | Nonflammable           | Nonflammable           |
| Hydrogen | Flammable gas (burns at all ambient temperatures) | Not available | Not available         | 752 F (400 C)            | 0.75                   | 0.04                   |

|          | Boiling Point   | Freezing Point  | Vapor Pressure    | Vapor Density | Specific Gravity | Water Solubility | pH             | Odor Threshold | Evaporation Rate | Viscosity            |
|----------|-----------------|-----------------|-------------------|---------------|------------------|------------------|----------------|----------------|------------------|----------------------|
| Argon    | -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     |
| Hydrogen | -423 F (-253 C) | -434 F (-259 C) | 760 mmHg @ -253 C | 0.07 (Air=1)  | Not applicable   | 1.82% @ 20 C     | Not applicable | Not available  | Not applicable   | 0.008957 cP @ 26.8 C |

|          | Molecular Weight | Molecular Formula | Density           | Weight per Gallon | Volatility by Volume | Volatility     | Solvent Solubility        |
|----------|------------------|-------------------|-------------------|-------------------|----------------------|----------------|---------------------------|
| Argon    | 39.948           | AR                | 1.784 g/L @ 0 C   | Not available     | 100%                 | Not applicable | Soluble: Organic solvents |
| Hydrogen | 2                | H2                | 0.08987 g/L @ 0 C | Not available     | Not available        | Not applicable | Soluble: Not available    |

## Section 10: Stability and Reactivity

|          | Stability                                   | Conditions to Avoid                         | Incompatible Materials   |
|----------|---|---|--|
| Argon    | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | No data available.   |
| Hydrogen | Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Metals, oxidizing materials, metal oxides, combustible materials, halogens, metal salts, halo carbons, nitrogen trifluoride, oxygen difluoride, magnesium and calcium carbonate, sodium, potassium |

|       | Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|-------|----------------------------------|------------------------------------|
| Argon | No data available.               | Will not polymerize.               |

|          | Hazardous Decomposition Products     | Possibility of Hazardous Reactions |
|----------|--------------------------------------|------------------------------------|
| Hydrogen | Miscellaneous decomposition products | Will not polymerize.               |

## Section 11: Toxicology Information

### Acute Effects

|          | Oral LD50       | Dermal LD50     | Inhalation   |
|----------|-----------------|-----------------|--|
| 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 |
| Hydrogen | Not available   | Not available   | Nausea, vomiting, difficulty breathing, irregular heartbeat, headache, fatigue, dizziness, disorientation, mood swings, tingling sensation, loss of coordination, convulsions, unconsciousness, coma     |

|          | Eye Irritation                                | Skin Irritation                               | Sensitization        |
|----------|---|---|----------------------|
| Argon    | No information on significant adverse effects | No information on significant adverse effects |                      |
| Hydrogen | Not irritating                                | Not irritating                                | Difficulty breathing |

### Chronic Effects

|          | Carcinogenicity | Mutagenicity    | Reproductive Effects | Developmental Effects |
|----------|-----------------|-----------------|----------------------|-----------------------|
| Argon    | Not established | Not established | Not established      | No data               |
| Hydrogen | Not available   | Not available   | Not available        | No data               |

## Section 12: Ecological Information

### Fate and Transport

|          | Eco toxicity  | Persistence / Degradability | Bioaccumulation / Accumulation | Mobility in Environment |
|----------|---|-----------------------------|--------------------------------|-------------------------|
| Argon    | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available | Not available               | Not available                  | Not available           |
| Hydrogen | Fish toxicity: Not available<br>Invertebrate toxicity: Not available<br>Algal toxicity: Not available<br>Phyto toxicity: Not available<br>Other toxicity: Not available | Not available               | Not available                  | Not available           |

## Section 13: Disposal Considerations

|          |   |
|----------|---|
| Argon    | Dispose in accordance with all applicable regulations.  |
| Hydrogen | Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. |

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

#### DOT Information For This Mixture

|                    |  |
|--------------------|--|
| Shipping Name      | Compressed gas, n.o.s. (Argon, Hydrogen) |
| UN Number          | UN1956                                   |
| Hazard Class       | 2.2                                      |
| Hazard Information | 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 |
|----------|----------------------|-----------|--------------------------|----------------|-----------------------|--|--|---------------------------------|
| Argon    | Argon, compressed    | UN1006    | 2.2                      | Not applicable | 2.2                   | 75 kg or L   | 150 kg                                   | N/A                             |
| Hydrogen | Hydrogen, compressed | UN1049    | 2.1                      | Not applicable | 2.1                   | Forbidden  | 150 kg                                   | None                            |

### Canadian Transportation of Dangerous Goods

|          | Shipping Name        | UN Number | Class | Packing Group / Risk Group |
|----------|----------------------|-----------|-------|----------------------------|
| Argon    | Argon, compressed    | UN1006    | 2.2   | Not applicable             |
| Hydrogen | Hydrogen, compressed | UN1049    | 2.1   | Not applicable             |

## Section 15: Regulatory Information

### U.S. Regulations

|          | CERCLA Sections | SARA 355.30    | SARA 355.40    |
|----------|-----------------|----------------|----------------|
| Argon    | Not regulated.  | Not regulated. | Not regulated. |
| Hydrogen | Not regulated.  | Not regulated. | Not regulated. |

### SARA 370.21

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

### SARA 372.65

|          |                |
|----------|----------------|
| Argon    | Not regulated. |
| Hydrogen | Not regulated. |

### OSHA Process Safety

|          |                |
|----------|----------------|
| Argon    | Not regulated. |
| Hydrogen | Not regulated. |

### State Regulations

|          | CA Proposition 65 |
|----------|-------------------|
| Argon    | Not regulated.    |
| Hydrogen | Not regulated.    |

### Canadian Regulations

|          | WHMIS Classification |
|----------|----------------------|
| Argon    | A                    |
| Hydrogen | A, B1.               |

### National Inventory Status

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

## Section 16: Other Information

|          | NFPA Rating                             |
|----------|---|
| Argon    | HEALTH=0 FIRE=0 REACTIVITY=0 SPECIAL=SA |
| Hydrogen | HEALTH=0 FIRE=4 REACTIVITY=0            |

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