

Safety Data Sheet

5% H₂/ Ar



Section 1: Product and Company Identification

Cee Kay Supply, Inc
5835 Manchester Avenue
Saint Louis, MO 63110
www.CeeKay.com
(314) 644-3500

Product Code: 5% H₂/ Ar

Synonyms:

Recommended Use:

Usage Restrictions:

Section 2: Hazards Identification



Danger

Hazard Classification:

Flammable (Category 1)
Gases Under Pressure

Hazard Statements:

Contains gas under pressure; may explode if heated
Extremely flammable gas

Precautionary Statements

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response:

Eliminate all ignition sources if safe to do so.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Storage:

Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

| | CAS # | Concentration |
|----------|-----------|---------------|
| Argon | 7440-37-1 | Balance |
| Hydrogen | 1333-74-0 | 5% |

| | 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"> ▪ N/A ▪ N/A |
| Hydrogen | Carbon dioxide, regular dry chemical Large fires: Flood with fine water spray. | None known | <ul style="list-style-type: none"> ▪ Any self-contained breathing apparatus with a full facepiece. ▪ Any self-contained breathing apparatus with a full facepiece. |

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. |
| 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 Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available | Not available | Not available | Not available |
| Hydrogen | 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

| | |
|-----------------|---|
| 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, flammable, n.o.s. (Argon, Hydrogen) |
| 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 | 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 |
| Hydrogen | HEALTH=0 FIRE=4 REACTIVITY=0 |

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