



ACCORDING TO US CFR 1910.1200

1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

| | |
|--------------|------------------------------|
| Product Name | GAS MIXTURE (HYDROGEN-ARGON) |
| Synonym(s) | HYDROGEN-ARGON |
| CAS No. | Mixture. |
| EC No. | Mixture. |

1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|----------------------|-----------------|
| Identified Use(s) | Industrial gas. |
| Uses Advised Against | Not known. |

1.3 Details of the supplier of the safety data sheet

| | |
|------------------------|--|
| Company Identification | Hudson Technologies Company |
| Address | PO Box 1541 One Blue Hill Plaza Pearl River, New York USA |
| Postal code | 10965 |
| Telephone | +1 (800) 953 2244 |
| Fax | +1 (845) 512 6070 |
| E-mail | information@hudsontech.com |

1.4 Emergency telephone number

| | |
|-----------------|-------------------|
| Company | +1 (800) 501 4376 |
| CHEMTREC (U.S.) | +1 (800) 424 9300 |
| INTERNATIONAL | +1 (703) 527 3887 |

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

US CFR 1910.1200 Flam. Gas 1: Extremely flammable gas.
Gases under pressure; Press. Gas; Compressed gas.

2.2 Label elements

Product Name GAS MIXTURE (HYDROGEN-ARGON)

Hazard Pictogram(s)



GHS02



GHS04

Signal Word(s)

Danger.

Hazard Statement(s)

H220 - EXTREMELY FLAMMABLE GAS H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION. CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR CGA-HG08 - BURNS WITH INVISIBLE FLAME.

Precautionary Statement(s)

P202 - Do not handle until all safety precautions have been read and understood P210 - Keep away from Heat/Open flames/Sparks/Hot surfaces. - 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 - Eliminate all ignition sources if safe to do so CGA-PG05 - Use a back flow preventive device in the piping. CGA-PG10 - Use only with equipment rated for cylinder pressure. CGA-PG12 - Do not open valve until connected to equipment prepared for use. CGA-PG06 - Close valve after each use and when empty. CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

2.3 Other hazards

Can form explosive mixture with air.
May cause asphyxiation when concentrations are sufficient to reduce oxygen below safe breathing levels.

May cause frost-bite.

2.4 Additional Information

This SDS is available in languages other than English.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| HAZARDOUS INGREDIENT(S) | CAS No. | %W/W | Hazard Statement(s) | Hazard Pictogram(s) |
|-------------------------|-----------|------|--|---------------------|
| Argon | 7440-37-1 | 65 | Press. Gas, Compressed gas; H280 | GHS04 |
| Hydrogen | 1333-74-0 | 35 | Flam. Gas 1; H220 Press. Gas; Compressed gas; H280 | GHS02 GHS04 |

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if necessary. If breathing has stopped, apply artificial respiration.

Skin Contact Flush skin with large amounts of water. Thaw frosted parts with lukewarm water. Do not rub affected area. If symptoms persist, obtain medical attention.

Eye Contact Flush eyes with water for at least 15 minutes.

Ingestion Unlikely route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: High concentrations: Loss of coordination, Unconsciousness.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. SECTION 5: FIREFIGHTING MEASURES

Extremely flammable gas. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

5.1 Extinguishing media

Suitable Extinguishing media Extinguish preferably with foam, dry chemical or waterspray or fog.

Unsuitable extinguishing media None known.

5.2 Special hazards arising from the substance or mixture

Contains gas under pressure; may explode if heated. Can form explosive mixture with air. Hydrogen burns with an invisible flame. Spontaneous/explosive re-ignition may occur.

5.3 Advice for fire-fighters

Evacuate area and fight fire remotely due to the risk of explosion. Eliminate all ignition sources if safe to do so. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions. Keep containers cool by spraying with water if exposed to fire.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate area. Eliminate sources of ignition. Ensure adequate ventilation. Avoid breathing gas. Wear suitable respiratory protection.

6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3 Methods and material for containment and cleaning up

Stop leak if safe to do so. Allow small spillages to evaporate provided there is adequate ventilation. Ventilate area.

6.4 Reference to other sections

See Also Section 8, 13.

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use non-sparking hand tools and explosion proof electrical equipment.

Avoid breathing gas. Avoid contact with skin and eyes. Wear protective gloves/protective clothing/eye protection/face protection. Do not drag, roll, slide or drop cylinders. Use a suitable hand truck design for cylinder movement. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object into valve cap openings. Doing so may damage valve causing a leak to occur. Secure cylinders in an upright position at all times, close all valves when not in use. Keep closed even when empty. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Protect from sunlight. Store in a well-ventilated place.

| | |
|------------------------|---------------------------------|
| Storage temperature | < 52°C (125 °F) |
| Storage life | Stable under normal conditions. |
| Incompatible materials | Air, Oxidizing agents. |

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits None assigned.

8.2 Exposure controls

Appropriate engineering controls Ensure adequate ventilation.

Personal protection equipment



Eye Protection

Wear suitable eye/face protection.



Skin protection

Wear suitable gloves.



Respiratory protection

Wear suitable respiratory protective equipment if exposure to high levels of material is likely.

Thermal hazards Not applicable.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance Gas.

| | |
|--|--------------------------------------|
| | Color: Colorless. |
| Odor | Odorless. |
| Odor threshold | Not established. |
| pH | Not applicable. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Critical Temperature | Not available. |
| Flash Point | Not available. |
| Evaporation rate | Not applicable. |
| Flammability (solid, gas) | Extremely flammable gas. |
| Upper/lower flammability or explosive limits | 4 – 75 Vol-% |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | Not available. |
| Partition coefficient: n-octanol/water | Not available. |
| Auto-ignition temperature | 1058 °F (570 °C) |
| Decomposition Temperature (°C) | Not available. |
| Viscosity | Not applicable. |
| Explosive properties | Can form explosive mixture with air. |
| Oxidizing properties | Not oxidizing. |
| 9.2 Other information | Not known. |

10. SECTION 10: STABILITY AND REACTIVITY

| | |
|---|--|
| 10.1 Reactivity | Stable under normal conditions. |
| 10.2 Chemical Stability | Stable under normal conditions. |
| 10.3 Possibility of hazardous reactions | Can form explosive mixture with air. |
| 10.4 Conditions to avoid | Keep away from heat and sources of ignition. |

10.5 Incompatible materials

Air, Oxidizing agents.

10.6 Hazardous decomposition product(s)

No hazardous decomposition products known.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

| | |
|--------------------------------|--|
| Acute toxicity - Ingestion | Low acute toxicity. |
| Acute toxicity - Skin Contact | Low acute toxicity. |
| Acute toxicity - Inhalation | Low acute toxicity. |
| Skin corrosion/irritation | Non-irritant. |
| Serious eye damage/irritation | Non-irritant. |
| Skin sensitization data | Not classified. |
| Respiratory sensitization data | Not classified. |
| Germ cell mutagenicity | There is no evidence of mutagenic potential. |
| Carcinogenicity | No evidence of carcinogenicity. |
| Reproductive toxicity | Not classified. |
| Lactation | Not classified. |
| STOT - single exposure | None anticipated. |
| STOT - repeated exposure | None anticipated. |
| Aspiration hazard | Not classified. |

11.2 Other information

Not known.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

| | |
|----------------------------------|--------------------------------|
| Toxicity - Aquatic invertebrates | Low toxicity to invertebrates. |
| Toxicity - Fish | Low toxicity to fish. |
| Toxicity - Algae | Low toxicity to algae. |
| Toxicity - Sediment | Not classified. |
| Compartment | |
| Toxicity - Terrestrial | Not classified. |

Compartment

12.2 Persistence and Degradation

No adverse ecological effects are expected.

12.3 Bioaccumulative potential

No adverse ecological effects are expected.

12.4 Mobility in soil

Not applicable.

12.5 Other adverse effects

None anticipated.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Containers must not be punctured or destroyed by burning, even when empty. Refer to manufacturer/supplier for information on recovery/recycling.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

14.1 UN number

UN No. 1954

14.2 UN proper shipping name

UN proper shipping name COMPRESSED GAS, FLAMMABLE, N.O.S.

14.3 Transport hazard class(es)

ADR/RID Class 2.1

IMDG Class 2.1

IMDG EMS Not available

ICAO/IATA

Excepted Quantities E0

Passenger and Cargo Aircraft Forbidden for transport by air.

Limited Quantities Packing


Instructions

Passenger and Cargo Aircraft Forbidden for transport by air.

Limited Quantities Max net Qty

Passenger and Cargo Aircraft Forbidden for transport by air.

Max net Qty

| | |
|---|---|
| Passenger and Cargo Aircraft | Forbidden for transport by air. |
| Max net Qty | |
| Special Provisions | A1 |
| Emergency Response | 10L |
| Guidebook (ERG) Code | |
| ADR Classification Code | 1F |
| ADR HIN | 23 |
| ADR Transport Category | 2 |
| Tunnel Restriction Code | B/D |
| Emergency Action Code | 2SE |
| Advice on Additional Personal Protection (APP) | Not applicable |
| 14.4 Packing group | |
| Packing group | Not applicable |
| Labels | 2.1 |
| |  |
| Special Provisions | 274 660 |
| Limited Quantities | 0 |
| Excepted Quantities | E0 |
| Mixed Packing Instructions for Packages | P200 |
| Special Packing Provisions for Packages | Not applicable |
| Mixed Packing Instructions for Packages | MP9 |
| 14.5 Environmental hazards | |
| Environmental hazards | Not classified as a Marine Pollutant. |
| 14.6 Special precautions for user | |
| Special precautions for user | Not known. |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | |
| Packing Instructions for Portable Tanks (M) | |
| Special Provisions for Portable Tanks | Not applicable |



Tank Code for Tanks CxBN(M)
Special Provisions for Tanks TA4 TT9
Vehicle for Tank Carriage FL
Special Provisions for Carriage - Not applicable
Packages
Special Provisions for Carriage - Not applicable
Bulk
Special Provisions for Carriage - CV9 CV10 CV36
Loading, Unloading and Handling
Special Provisions for Carriage - S2 S20
Operation

15. SECTION 15: REGULATORY INFORMATION

15.1 Federal

Toxic and hazardous substances All chemicals are not listed.

(29 CFR 1910; Subpart Z)

National emission standards for All chemicals are not listed.

hazardous air pollutants (40 CFR

61.01)

Title III Consolidated List of Lists Hydrogen (CAS No.: 1333-74-0)

TSCA (Toxic Substance Control All chemicals listed.

Act)

CAA 602 - Ozone Depleting All chemicals are not listed.

Substances (ODS)

15.2 State

State Right to Know Lists Argon (CAS No.: 7440-37-1)

Listed in: New Jersey, Pennsylvania, Rhode Island, Minnesota.

Hydrogen (CAS No.: 1333-74-0)

Listed in: New Jersey, Pennsylvania, Rhode Island, Minnesota.

Proposition 65 (California) All chemicals are not listed.

15.3 Other

OSPAR List of Chemicals for All chemicals are not listed.

Priority Action

NTP (National Toxicology All chemicals are not listed.

Program)

OSHA All chemicals are not listed.

(List of Highly Hazardous
Chemicals, Toxics and
Reactives)

IARC (International Agency for
Research on Cancer) All chemicals are not listed.

16. SECTION 16: OTHER INFORMATION

The following sections contain 1-16.
revisions or new statements:

| NFPA | | HMIS | |
|-------------|---|------------------|---|
| Health | 1 | Health | 1 |
| Fire | 4 | Flammability | 4 |
| Instability | 0 | Physical hazards | 3 |

LEGEND:

Hazard Pictogram(s)



GHS02



GHS04

Hazard Statement(s)

H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

P410+P403: Protect from sunlight. Store in a well-ventilated place.

Additional Information required by Federal Standard 313 Rev. E:



SAFETY DATA SHEET

25-Jan-2017

Contract or Solicitation Number: SPE4A6-16-D-0226
Prime Contractor: Hudson Technologies, Inc.
Prime Contractor CAGE: 7DSQ0

National Stock Number (NSN): 6830000529918
Specification Reference:

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