



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 (ARGON-CARBON DIOXIDE-OXYGEN)
Synonym(s)	ARGON-CARBON DIOXIDE-OXYGEN
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 Gases under pressure; Press. Gas; Compressed gas.

2.2 Label elements

Product Name GAS MIXTURE (ARGON-CARBON DIOXIDE-OXYGEN)

Hazard Pictogram(s)



GHS04

Signal Word(s)

Warning.

Hazard Statement(s)

H280: Contains gas under pressure; may explode if heated.
 OSHA-H01: MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

Precautionary Statement(s)

P202: Do not handle until all safety precautions have been read and understood.
 P271+P403: Use and store only outdoors or in a well-ventilated place.
 P304, P340, P313: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention.
 P410+P403: Protect from sunlight. Store in a well-ventilated place.

2.3 Other hazards

May cause asphyxiation when concentrations are sufficient to reduce oxygen below safe breathing levels.

2.4 Additional Information

CGA-PG05: Use a back flow preventive device in the piping.
 CGA-PG10: Use only with equipment rated for cylinder pressure.
 CGA-PG06: Close valve after each use and when empty.
 CGA-PG02: Protect from sunlight when ambient temperature exceeds 52 °C (125 °F).
 CGA-PG27: Read and follow the Safety Data Sheet (SDS) before use.

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	90	Press. Gas, Compressed gas; H280	GHS04
Carbon dioxide	124-38-9	5	Press. Gas, Liquefied gas; H280	GHS04
Oxygen	7782-44-7	5	Press. Gas, Compressed gas; H280, Ox. Gas 1; H270	GHS04 GHS03

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 Wash skin with water.

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:

Low concentrations: Increased respiration, Headache.

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

Non-flammable.

5.1 Extinguishing media

Suitable Extinguishing media As appropriate for surrounding fire.

Unsuitable extinguishing media None known.

5.2 Special hazards arising from the substance or mixture

Contains gas under pressure; may explode if heated. Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide

5.3 Advice for fire-fighters

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. 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. Avoid breathing gas. Wear suitable respiratory 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

<125°F (52°C)

Storage life

Stable under normal conditions.

Incompatible materials

Alkali metals, Alkaline earth metals.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Carbon dioxide	124-38-9	5000	9000	30000	54000	NIOSH
Carbon dioxide	124-38-9	5 000	9 000			OSHA

Remark

Footnote

NIOSH

National Institute for Occupational Safety and Health

OSHA

Occupational Safety and Health Administration

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.
Odour threshold	Not established.
pH	Not applicable.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash Point	Not available.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not applicable.
Decomposition Temperature (°C)	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
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

No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid

Keep away from heat and direct sunlight.

10.5 Incompatible materials

Alkali metals, Alkaline earth metals.

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

Carbon dioxide: May contribute to global warming.

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. 1956

14.2 UN proper shipping name

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

14.3 Transport hazard class(es)

ADR/RID Class 2.2

IMDG Class 2.2

IMDG EMS Not available.

ICAO/IATA

Excepted Quantities E1

Passenger and Cargo Aircraft

Limited Quantities Packing

Instructions

Cargo Aircraft Limited Quantities

Max net Qty

Special Provisions Not applicable.

Emergency Response 2L

Guidebook (ERG) Code

ADR Classification Code 1A

ADR HIN 20

ADR Transport Category 3

Tunnel Restriction Code E

Emergency Action Code 2TE

Advice on Additional Personal Not applicable.

Protection (APP)

14.4 Packing group

Packing group Not applicable.

Labels 2.2



Special Provisions 274 655

Limited Quantities 120 m

Excepted Quantities E1

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 (M)

Tanks

Special Provisions for Portable Not applicable.

Tanks

Tank Code for Tanks CxBN(M)

Special Provisions for Tanks TA4 TT9

Vehicle for Tank Carriage AT

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 - Not applicable.

Operation

15. SECTION 15: REGULATORY INFORMATION

15.1 Federal

Toxic and hazardous substances Carbon dioxide (CAS No.: 124-38-9)

(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 All chemicals are not listed.

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.

Carbon dioxide (CAS No.: 124-38-9)

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

Oxygen (CAS No. 7782-44-7)

Listed in: New Jersey, Pennsylvania, Rhode Island.

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 All chemicals are not listed.
Research on Cancer)

16. SECTION 16: OTHER INFORMATION

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

NFPA		HMIS	
Health	1	Health	1
Fire	0	Flammability	0
Instability	0	Physical hazards	3

LEGEND:

Hazard Pictogram(s)



GHS04

Hazard Statement(s)

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



SAFETY DATA SHEET

04-Apr-2017

Precautionary Statement(s) P410+P403: Protect from sunlight. Store in a well-ventilated place.

Additional Information required by Federal Standard 313 Rev. E:

Contract or Solicitation Number: SPE4A6-16-D-0226

Prime Contractor: Hudson Technologies, Inc.

Prime Contractor CAGE: 7DSQ0

National Stock Number (NSN): 6830015227674

Specification Reference:

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