

Argon (0.0001% - 90.75%), Hydrogen (0.0001% - 0.75%) in Methane

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/22/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Mixture
Product name	: Argon (0.0001% - 90.75%), Hydrogen (0.0001% - 0.75%) in Methane
Product code	: SG-2003-00136

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

Use of the substance/mixture	: Test gas/Calibration gas.
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1.3. Details of the supplier of the safety data sheet

Air Liquide America Specialty Gases
6141 Easton Rd
Plumsteadville, PA 18949 - USA
T 1.800.217.2688
www.airliquide.com

1.4. Emergency telephone number

Emergency number	: CHEMTRAC: 1-800-424-9300
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

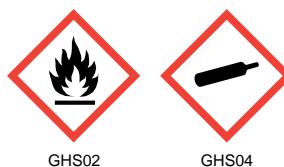
Classification (GHS-US)

Flam. Gas 1	H220
Compressed gas	H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02

GHS04

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: 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

Precautionary statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood

P210 - Keep away from heat, open flames, sparks. - No smoking

P220 - Keep/Store away from clothing/.../combustible materials

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P308+P313 - If exposed or concerned: Get medical advice/attention

P312 - Call a poison center/doctor/... if you feel unwell

P370+P376 - In case of fire: Stop leak if safe to do so

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

P381 - Eliminate all ignition sources if safe to do so

P403 - Store in a well-ventilated place

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

CGA-PG05 - Use a back flow preventive device in the piping

CGA-PG06 - Close valve after each use and when empty

CGA-PG10 - Use only with equipment rated for cylinder pressure

CGA-PG14 - Approach suspected leak area with caution

CGA-PG21 - Open valve slowly

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2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Methane	(CAS No)74-82-8	8.5 - 99.9998	Flam. Gas 1, H220 Compressed gas, H280
Argon	(CAS No)7440-37-1	0.0001 - 90.75	Compressed gas, H280
Hydrogen	(CAS No)1333-74-0	0.0001 - 0.75	Flam. Gas 1, H220 Compressed gas, H280

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation

: Remove to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact

: Adverse effects not expected from this product.

First-aid measures after eye contact

: Adverse effects not expected from this product.

First-aid measures after ingestion

: Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries

: Symptoms similar to those listed under inhalation.

Symptoms/injuries after inhalation

: May displace oxygen and cause rapid suffocation. If you feel unwell, seek medical advice.

Symptoms/injuries after skin contact

: Adverse effects not expected from this product.

Symptoms/injuries after eye contact

: Adverse effects not expected from this product.

Symptoms/injuries after ingestion

: Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration

: Not known.

Chronic symptoms

: None known.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media

: Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Fire hazard

: This product is flammable. Extremely flammable gas.

Explosion hazard

: May form flammable/explosive vapor-air mixture. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity

: None known.

5.3. Advice for firefighters

Firefighting instructions

: In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

Protection during firefighting

: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures

: Ensure adequate ventilation.

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6.1.1. For non-emergency personnel

Protective equipment	: Wear protective equipment consistent with the site emergency plan.
Emergency procedures	: Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

6.1.2. For emergency responders

Protective equipment	: Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.
Emergency procedures	: Evacuate and limit access. Ventilate area. Remove ignition sources. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering atmospheres of unknown contaminant concentration until proven to be safe.

6.2. Environmental precautions

Try to stop release if safe to do so.

6.3. Methods and material for containment and cleaning up

For containment	: Try to stop release if safe to do so.
Methods for cleaning up	: Dispose of this material and its container in accordance with local regulations.

6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure. Handle empty containers with care because residual vapors are flammable. In use, may form flammable vapor-air mixture. Close valve after each use and when empty.
Precautions for safe handling	: Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage.
Incompatible products	: None known.
Incompatible materials	: Air. Oxidizing materials.

7.3. Specific end use(s)

Test gas/Calibration gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrogen (1333-74-0)

Argon (7440-37-1)

Methane (74-82-8)

USA ACGIH	ACGIH TWA (ppm)	1000 ppm
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8.2. Exposure controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits. Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities.

Hand protection

: Wear working gloves when handling gas containers. 29CFR 1910.138: Hand Protection.

Eye protection

: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.

Skin and body protection

: Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.

Respiratory protection

: None necessary during normal and routine operations.

Thermal hazard protection

: None necessary during normal and routine operations.

Environmental exposure controls

: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

Other information

: Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

: Gas

Appearance

: Clear, colorless gas.

Color

: Colorless

Odor

: odorless

Odor threshold

: No data available

pH

: No data available

Relative evaporation rate (butyl acetate=1)

: No data available

Relative evaporation rate (ether=1)

: Not applicable for gas-mixtures.

Melting point

: No data available

Freezing point

: No data available

Boiling point

: No data available

Flash point

: No data available

Auto-ignition temperature

: No data available

Decomposition temperature

: No data available

Flammability (solid, gas)

: No data available

Vapor pressure

: No data available

Relative vapor density at 20 °C

: No data available

Relative density

: No data available

Relative gas density

: Lighter or similar to air.

Solubility

: Water: Solubility in water of component(s) of the mixture :

• : 1.6 mg/l • : 61 mg/l • : 26 mg/l

Log Pow

: No data available

Log Kow

: No data available

Viscosity, kinematic

: No data available

Viscosity, dynamic

: No data available

Explosive properties

: No data available

Oxidizing properties

: None.

Explosive limits

: No data available

9.2. Other information

Additional information

: None.

SECTION 10: Stability and reactivity

10.1. Reactivity

None known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can form explosive mixture with air.

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10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Air. Oxidizing materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Hydrogen (1333-74-0)

LC50 inhalation rat (ppm)	410000 ppm/4h
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Argon (7440-37-1)

LC50 inhalation rat (ppm)	410000 ppm/4h
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Methane (74-82-8)

LC50 inhalation rat (ppm)	410000 ppm/4h
ATE US (gases)	410000.00000000 ppmV/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. If you feel unwell, seek medical advice.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : None known.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Hydrogen (1333-74-0)

Persistence and degradability	No ecological damage caused by this product.
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Argon (7440-37-1)

Persistence and degradability	No ecological damage caused by this product.
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Methane (74-82-8)

Persistence and degradability	The substance is biodegradable. Unlikely to persist. No data available.
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12.3. Bioaccumulative potential

Hydrogen (1333-74-0)

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BCF fish 1	(no bioaccumulation expected)
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

Argon (7440-37-1)

Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

Methane (74-82-8)

Log Pow	1.09
Log Kow	Not applicable for gas-mixtures.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Hydrogen (1333-74-0)	
Ecology - soil	No ecological damage caused by this product.
Argon (7440-37-1)	
Ecology - soil	No ecological damage caused by this product.
Methane (74-82-8)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on ozone layer	: No additional information available
Effect on the global warming	: Contains greenhouse gas(es) not covered by 842/2006/EC.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into areas where there is a risk of forming an explosive mixture with air.
Waste disposal recommendations	: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.
Additional information	: None.

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SECTION 14: Transport information

In accordance with DOT

Transport document description	:	UN1954 Compressed gas, flammable, n.o.s., 2.1
UN-No.(DOT)	:	1954
DOT NA no.	:	UN1954
Proper Shipping Name (DOT)	:	Compressed gas, flammable, n.o.s.
Department of Transportation (DOT) Hazard Classes	:	2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Hazard labels (DOT)	:	2.1 - Flammable gas



DOT Symbols

DOT Packaging Exceptions (49 CFR 173.xxx)

DOT Packaging Non Bulk (49 CFR 173.xxx)

DOT Packaging Bulk (49 CFR 173.xxx)

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

DOT Vessel Stowage Location

Additional information

Other information

ADR

Transport document description

Class (ADR)

Hazard identification number (Kemler No.)

Classification code (ADR)

Hazard labels (ADR)



Orange plates

Tunnel restriction code (ADR)

LQ

Excepted quantities (ADR)

Transport by sea

UN-No. (IMDG)

Proper Shipping Name (IMDG)

Class (IMDG)

Air transport

UN-No.(IATA)

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Proper Shipping Name (IATA) : COMPRESSED GAS, FLAMMABLE, N.O.S.

Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

Hydrogen (1333-74-0)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
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Argon (7440-37-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas
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Methane (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
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EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

15.2.2. National regulations

No additional information available

15.3. US State regulations

Hydrogen (1333-74-0)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

Argon (7440-37-1)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

Methane (74-82-8)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes

: Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.

:

Other information

: This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

Full text of H-phrases: see section 16:

Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases Category 1
H220	Extremely flammable gas

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H280

Contains gas under pressure; may explode if heated

SDS US (GHS HazCom 2012)

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