



Argon (0.0001% - 5.00%), Nitrogen (0.0001% - 5.00%) in Oxygen

Safety Data Sheet

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

Date of issue: 09/18/2014

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% - 5.00%), Nitrogen (0.0001% - 5.00%) in Oxygen
Product code : SG-2003-00669

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

Use of the substance/mixture : Test gas/Calibration gas.

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 : CHEMTREC: 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Ox. Gas 1 H270
Compressed gas H280

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



GHS03

GHS04

Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H270 - May cause or intensify fire; oxidizer
H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood
P220 - Keep/Store away from clothing, combustible materials
P244 - Keep reduction valves/valves and fittings free from oil and grease
P271 - Use only outdoors or in a well-ventilated area
P370+P376 - In case of fire: Stop leak if safe to do so
P403 - Store in a well-ventilated place
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-PG20 - Use only with equipment of compatible materials of construction
CGA-PG21 - Open valve slowly
CGA-PG22 - Use only with equipment cleaned for oxygen service

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

Argon (0.0001% - 5.00%), Nitrogen (0.0001% - 5.00%) in Oxygen

Safety Data Sheet

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

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Oxygen	(CAS No)7782-44-7	90 - 99.9998	Ox. Gas 1, H270 Compressed gas, H280
Argon	(CAS No)7440-37-1	0.0001 - 5	Compressed gas, H280
Nitrogen	(CAS No)7727-37-9	0.0001 - 5	Compressed gas, H280

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Adverse effects not expected from this product.
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 : Adverse effects not expected from this product.
Symptoms/injuries after inhalation : Adverse effects not expected from this product.
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 : The product is not flammable.
Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity : None under recommended storage and handling conditions (see section 7).

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.

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.

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Safety Data Sheet

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

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. |

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

No additional information available

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. |
| Precautions for safe handling | : Do not handle until all safety precautions have been read and understood. 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. |
| Storage conditions | : Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area. |
| Incompatible products | : Reducing agents. |
| Incompatible materials | : Flammable materials. |

7.3. Specific end use(s)

Test gas/Calibration gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nitrogen (7727-37-9)

Argon (7440-37-1)

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. 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. |

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Safety Data Sheet

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Color	: Colorless
Odor	: odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
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	: Heavier than air.
Solubility	: Water: Solubility in water of component(s) of the mixture : •: 39 mg/l •: 61 mg/l •: 20 mg/l
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Not flammable.
Oxidizing properties	: May cause or intensify fire; oxidizer.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

May react violently with reducing agents.

10.4. Conditions to avoid

Refer to Section 10 on Incompatible Materials.

10.5. Incompatible materials

Flammable materials. Reducing agents.

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
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Oxygen (7782-44-7)

Argon (0.0001% - 5.00%), Nitrogen (0.0001% - 5.00%) in Oxygen

Safety Data Sheet

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

LC50 inhalation rat (ppm)	400000 ppm/4h
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Nitrogen (7727-37-9)

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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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 : Adverse effects not expected from this product.

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

Oxygen (7782-44-7)

Persistence and degradability	No ecological damage caused by this product.
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Nitrogen (7727-37-9)

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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12.3. Bioaccumulative potential

Oxygen (7782-44-7)

Log Pow	Not applicable for inorganic gases.
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Bioaccumulative potential	No ecological damage caused by this product.
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Nitrogen (7727-37-9)

Log Pow	Not applicable for inorganic gases.
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Bioaccumulative potential	No ecological damage caused by this product.
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Argon (7440-37-1)

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

Oxygen (7782-44-7)

Ecology - soil	No ecological damage caused by this product.
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Nitrogen (7727-37-9)

Ecology - soil	No ecological damage caused by this product.
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Safety Data Sheet

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

Argon (7440-37-1)

Ecology - soil

No ecological damage caused by this product.

12.5. Other adverse effects

Effect on ozone layer

: No additional information available

Effect on the global warming

: No known ecological damage caused by this product.

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 disposal recommendations

: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

SECTION 14: Transport information

In accordance with DOT

Transport document description

: UN3156 Compressed gas, oxidizing, n.o.s.

UN-No.(DOT)

: 3156

DOT NA no.

: UN3156

DOT Proper Shipping Name

: Compressed gas, oxidizing, n.o.s.

Hazard labels (DOT)

: 2.2 - Non-flammable gas
5.1 - Oxidizer



DOT Symbols

: G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102)

: A14 - This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with 173.306 of this subchapter when transported aboard an aircraft.

DOT Packaging Exceptions (49 CFR 173.xxx)

: 306

DOT Packaging Non Bulk (49 CFR 173.xxx)

: 302

DOT Packaging Bulk (49 CFR 173.xxx)

: 314;315

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

: 75 kg

DOT Quantity Limitations Cargo aircraft only (49
CFR 175.75)

: 150 kg

DOT Vessel Stowage Location

: D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

Additional information

Other information

: No supplementary information available.

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Safety Data Sheet

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

ADR

Transport document description : UN 3156, 2.2 (5.1), (E)
Class (ADR) : 2 - Gases
Hazard identification number (Kemler No.) : 25
Classification code (ADR) : 10
Hazard labels (ADR) : 2.2 - Non-flammable compressed gas
5.1 - Oxidizer



Orange plates :



Tunnel restriction code (ADR) : E
LQ : 0
Excepted quantities (ADR) : E0

Transport by sea

UN-No. (IMDG) : 3156
Proper Shipping Name (IMDG) : COMPRESSED GAS, OXIDIZING, N.O.S.
Class (IMDG) : 2.2 - Non-flammable, non-toxic gases

Air transport

UN-No.(IATA) : 3156
Proper Shipping Name (IATA) : COMPRESSED GAS, OXIDIZING, N.O.S.
Class (IATA) : 2

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

Oxygen (7782-44-7)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class C - Oxidizing Material
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Nitrogen (7727-37-9)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed 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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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

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Safety Data Sheet

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

15.3. US State regulations

Oxygen (7782-44-7)

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

Nitrogen (7727-37-9)

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

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
Ox. Gas 1	Oxidizing gases Category 1
H270	May cause or intensify fire; oxidizer
H280	Contains gas under pressure; may explode if heated

SDS US (GHS HazCom 2012)

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. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.