

Safety Data Sheet 906231

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 08/03/2016 Version: 2.0

SECTION 1: Identification		
1.1. Identification		
Product form	: Mixture	
Product name	 Argon (0.00001% - 40.00%), Xenon (0.00001% - 15.00%), Oxygen (19.50% - 23.50%), Krypton (0.00001% - 15.00%) in Nitrogen 	
Product code	: SG-2005-06644	
1.2. Relevant identified uses of the su	ibstance or mixture and uses advised against	
Use of the substance/mixture	: Test gas/Calibration gas	
1.3. Details of the supplier of the safe	ty data sheet	
Air Liquide USA LLC and its affiliates 9811 Katy Freeway, Suite 100 Houston, TX 77024 - USA T 1-800-819-1704 www.us.airliquide.com		
1.4. Emergency telephone number		
Emergency number	: CHEMTREC: 1-800-424-9300	
SECTION 2: Hazard(s) identification	on	
2.1. Classification of the substance o	r mixture	
GHS-US classification		
Gases under pressure H280		
Compressed gas		
Full text of H statements : see section 16		
2.2. Label elements		
GHS-US labeling		
Hazard pictograms (GHS-US)		
Hazard pictograms (GHS-03)		
	GHS04	
Signal word (GHS-US)	: Warning	
Hazard statements (GHS-US)	: H280 - Contains gas under pressure; may explode if heated CGA-HG24 - Supports combustion	
Precautionary statements (GHS-US)	P202 - Do not handle until all safety precautions have been read and understood P271 - Use only outdoors or in a well-ventilated area	
	P280 - Wear eye protection, face protection, protective gloves, protective clothing	
	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	
2.2 Other hererde		
2.3. Other hazards		

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substance

Not applicable 3.2. Mixture

Name	Product identifier	%	GHS-US classification
Nitrogen	(CAS No) 7727-37-9	6.5 - 80.50997	Compressed gas, H280
Argon	(CAS No) 7440-37-1	0.00001 - 40	Compressed gas, H280
Oxygen	(CAS No) 7782-44-7	19.49 - 23.5	Ox. Gas 1, H270 Compressed gas, H280
Xenon	(CAS No) 7440-63-3	0.00001 - 15	Liquefied gas, H280
Krypton	(CAS No) 7439-90-9	0.00001 - 15	Compressed gas, H280

Full text of H-phrases: see section 16

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 effec	ts, both acute and delayed			
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	: Adverse effects not expected from this product.			
4.3. Indication of any immediate medical	4.3. Indication of any immediate medical attention and special treatment needed			
If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.				
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 sub	ostance 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 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 n	neasures :	Ensure adequate ventilation.		
6.1.1.	.1.1. For non-emergency personnel			
Protective equipment : Wear protective equipment consistent with the site emergency plan.		Wear protective equipment consistent with the site emergency plan.		
Emergency procedures :		Evacuate personnel to a safe area. 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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6.1.2.	.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.		
Emerge	ncy procedures	: Evacuate and limit access. Ventilate area.		
6.2.	Environmental precautions			
Try to st	op release if without risk.			
6.3.	Methods and material for containme	nt and cleaning up		
For cont	ainment	: Try to stop release if without risk.		
Methods	s for cleaning up	: Dispose of contents/container in accordance with local/regional/national/international regulations.		
6.4.	Reference to other sections			
See also	Sections 8 and 13.			
SECT	ON 7: Handling and storage			
7.1.	Precautions for safe handling			
Addition	al hazards when processed	: Pressurized container: Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty.		
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	ng any incompatibilities		
Technic	al 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 cylinders from physical damage; do not drag, roll, slide or drop. Store in well ventilated area.		
Incompatible products :		: None known.		
Incompatible materials		Flammable materials.		

SECTION 8: Exposure controls/personal protection

8.1.	Control parameters
Argo	ח (7440-37-1)
Not a	oplicable
Nitro	gen (7727-37-9)
	oplicable
Xeno	n (7440-63-3)
Not a	oplicable
Oxyg	en (7782-44-7)
Not a	oplicable
Krypt	on (7439-90-9)
Not a	oplicable

8.2. Exposure controls	
Appropriate engineering controls :	Ensure exposure is below occupational exposure limits (where available). Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Consider work permit system e.g. for maintenance activities.
Hand protection :	Wear working gloves when handling gas containers. 29 CFR 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. See Sections 5 & 6.
Thermal hazard protection :	None necessary during normal and routine operations.

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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	
рН	: No data available	
Melting point	: No data available	
Freezing point	: No data available	
Boiling point	: No data available	
Flash point	: Not applicable (non-flammable gas)	
Relative evaporation rate (butyl acetate=1)	: No data available	
Flammability (solid, gas)	: See Section 2.1 and 2.2	
Explosion limits	: Not applicable (non-flammable gas)	
Explosive properties	: Not applicable (non-flammable gas).	
Oxidizing properties	: Supports combustion.	
Vapor pressure	: No data available	
Relative density	: No data available	
Relative vapor density at 20 °C	: No data available	
Relative gas density	: Heavier than air	
Solubility	: Water: No data available	
Log Pow	: No data available	
Auto-ignition temperature	: No data available	
Decomposition temperature	: No data available	
Viscosity	: No data available	
Viscosity, kinematic	: No data available	
Viscosity, dynamic	: No data available	
9.2. Other information		
Additional information	: Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level	

SECTIO	SECTION 10: Stability and reactivity					
10.1.	Reactivity					
None kno	wn.					
10.2.	Chemical stability					
Stable un	der normal conditions.					
10.3.	Possibility of hazardous reactions					
Can form	explosive mixtures with flammable materials.					
10.4.	Conditions to avoid					
None und	ler recommended storage and handling conditions (see section 7).					
10.5.	Incompatible materials					
Flammab	Flammable materials.					
10.6.	Hazardous decomposition products					
Under no	rmal conditions of storage and use hazardous decomposition products should not be produced.					

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SECTION 11: Toxicological information

11.1.	Information	on toxicol	ogical effects

Acute toxicity	: Not classified
Argon (7440-37-1)	
LC50 inhalation rat (ppm)	820000 ppm/4h
Nitrogen (7727-37-9)	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE US (gases)	820000.000 ppmV/4h
Xenon (7440-63-3)	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE US (gases)	410000.000 ppmV/4h
Oxygen (7782-44-7)	
LC50 inhalation rat (ppm)	800000 ppm/4h
Krypton (7439-90-9)	
LC50 inhalation rat (ppm)	820000 ppm/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	: 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	: Adverse effects not expected from this product.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Argon (7440-37-1)			
Persistence and degradability No ecological damage caused by this product.			
Nitrogen (7727-37-9)			
Persistence and degradability	No ecological damage cause	No ecological damage caused by this product.	
Xenon (7440-63-3)			
Persistence and degradability	No ecological damage cause	No ecological damage caused by this product.	
Oxygen (7782-44-7)			
Persistence and degradability	No ecological damage cause	No ecological damage caused by this product.	
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Krypton (7439-90-9)			
Persistence and degradability No ecological damage caused by this product.			
2.3. Bioaccumulative potential			
Argon (7440-37-1)			
Log Pow Not applicable for inorganic gases.			
Bioaccumulative potential	No ecological damage caused by this product.		
Nitrogen (7727-37-9)			
Log Pow	Not applicable for inorganic gases.		
Bioaccumulative potential	No ecological damage caused by this product.		
Xenon (7440-63-3)	·		
Log Pow	Not applicable for inorganic gases.		
Bioaccumulative potential	No ecological damage caused by this product.		
Oxygen (7782-44-7)	·		
Log Pow	Not applicable for inorganic gases.		
Bioaccumulative potential	No ecological damage caused by this product.		
Krypton (7439-90-9)			
Log Pow	Not applicable for inorganic gases.		
Bioaccumulative potential	No ecological damage caused by this product.		
2.4. Mobility in soil			
-			
Argon (7440-37-1)	No coolegical demose caused by this product		
Ecology - soil	No ecological damage caused by this product.		
Nitrogen (7727-37-9)	No exclusive demonstration that this medicate		
Ecology - soil	No ecological damage caused by this product.		
Xenon (7440-63-3)			
Ecology - soil	No ecological damage caused by this product.		
Oxygen (7782-44-7)			
Ecology - soil	blogy - soil No ecological damage caused by this product.		
Krypton (7439-90-9)			
Ecology - soil	No ecological damage caused by this product.		
2.5. Other adverse effects			
iffect on ozone layer	: No known effects from this product		
ffect on the global warming	: No known ecological damage caused by this product.		
ECTION 12: Disposal consideration			
ECTION 13: Disposal consideration	15		
3.1. Waste treatment methods	Contract sumplies if suideness is neglized. Do not discharge into any store where its		
Vaste 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.		
Vaste disposal recommendations	: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for		
	more guidance on suitable disposal methods.		
ECTION 14: Transport information			
Department of Transportation (DOT)			
accordance with DOT			
ransport document description	: UN1956 Compressed gas, n.o.s., 2.2		
IN-No.(DOT)	: UN1956		
Proper Shipping Name (DOT)	: Compressed gas, n.o.s.		
Class (DOT)	: 2.2 - Class 2.2 - Non-flammable compressed gas 49 CFR 173.115		

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OT Packaging Non Bulk (49 CFR 173.xxx)	: 302:305
OT Packaging Bulk (49 CFR 173.xxx)	: 314;315
OT Symbols	: G - Identifies PSN requiring a technical name
OT Packaging Exceptions (49 CFR 173.xxx)	
OT Quantity Limitations Passenger aircraft/rai 49 CFR 173.27)	
OT Quantity Limitations Cargo aircraft only (4) FR 175.75)	∔9 : 150 kg
OT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel
ther information	: No supplementary information available.
DG	
ransport document description	: UN1956 Compressed gas, n.o.s., 2.2
N-No. (TDG)	: UN1956
roper Shipping Name	: Compressed gas, n.o.s.
DG Primary Hazard Classes DG Special Provisions	 2.2 - Class 2.2 - Non-Flammable, Non-Toxic Gas. 16 - (1) The technical name of at least one of the most dangerous substances that
	shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(iii)(A) of Part 3 (Documentation). The technical name must also be shown in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a)UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S.; (b)UN1851, MEDICINE, LIQUID, TOXIC, N.O.S.; (c)UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, SUBJ, TOXIC, N.O.S.; (c)UN3249, MEDICINE, SOLID, TOXIC, N.O.S. an example in Canada is the "Food and Drugs Act". (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a)UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b)UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS. SOR/2014-306,148 - (1) Part 5 (Means of Containment) does not apply to radiation detectors that contain these dangerous goods in non-refillable pressure receptacles if (a)the working pressure, when the receptacle is less than 5 000 KPa; (b)the capacity of each receptacle is less than 12 L; (c)each receptacle is not fitter with a relief device, or (ii)at least 4 times the working pressure, when the receptacle is fitted with a relief device; (d)each receptacle is manufactured from material that will not fragment upon rupture; (e)each detector is manufactured from material that will not fragment upon rupture; (e)each detector is anoufactured in equilty assurance program; ISO 9001:2008 is an example of a quality assurance program. (f)the detectors are transported in strong outer means of containment, and (g)a detector in its outer
xplosive Limit and Limited Quantity Index	requirements of subsection (1) or (2), as applicable, and the capacity of the receptacles that contain the detectors is less than 50 mL. SOR/2014-306 : 0.125 L

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Passenger Carrying Road Vehicle or Passenger : 75 L Carrying Railway Vehicle Index

Transport by sea

UN-No. (IMDG)	: 1956
Proper Shipping Name (IMDG)	: COMPRESSED GAS, N.O.S.
Class (IMDG)	: 2 - Gases
Air transport	
UN-No. (IATA)	: 1956
Proper Shipping Name (IATA)	: COMPRESSED GAS, N.O.S.
Class (IATA)	: 2

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SECTION 15: Regulator	y information
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15.1. US Federal regulations

Argon (7440-37-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Nitrogen (7727-37-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Xenon (7440-63-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Oxygen (7782-44-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Krypton (7439-90-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Argon (7440-37-1)		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS Classification	Class A - Compressed Gas	
Nitrogen (7727-37-9)		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS Classification	Class A - Compressed Gas	
Xenon (7440-63-3)		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS Classification	Class A - Compressed Gas	
Oxygen (7782-44-7)		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS Classification	Class A - Compressed Gas Class C - Oxidizing Material	
Krypton (7439-90-9)		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS Classification	Class A - Compressed Gas	

EU-Regulations

Argon	(7440-37-1)
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Nitrogen (7727-37-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Xenon (7440-63-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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Oxygen (7782-44-7)

Listed on the EEC invento	ry EINECS (European Invento	ory of Existing Commercial Chemical Substances)
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Krypton (7439-90-9)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Argon (7440-37-1)

Listed on the AICS (Australian Inventory of Chemical Substances)

- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Nitrogen (7727-37-9)

Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Xenon (7440-63-3)

Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Oxygen (7782-44-7)

Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIOC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Krypton (7439-90-9)

Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

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

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

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

SECTION 16: Other information

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.

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Full text of H-phrases:		
	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 USA LLC and its affiliates' 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.