

**SAFETY DATA SHEET**Revised edition no : 1
Date : 02/2015**Shielding Gas**

PG

SECTION 1. PRODUCT AND COMPANY UNDERTAKING

Trade Name	Shielding Gas
UN no	1956
Recommended Use	Industrial
Company:	Puregas (Pty) Ltd PO Box 123884, Alrode, 1451, South Africa Tel : (011) 903 9760 Fax: (011) 903 9766 Cellphone: 082 889 6946 (1 st) 082 885 7475 (2 nd) Info@puregas.co.za Emergency Tel: 0800 172 743 (Rapid Spill Response)

SECTION 2. HAZARDS IDENTIFICATION**DANGER!****EMERGENCY OVERVIEW:**

Extremely flammable

Simple asphyxiant

Contents under pressure

Keep at temperatures below 52°C / 125°F

Appearance:	Colorless
Odor:	Odorless
POTENTIAL HEALTH EFFECTS	
Principle routes of Exposure	Inhalation.
Acute Toxicity	
Inhalation	Simple asphyxiant. High concentrations may cause asphyxia from lack of oxygen or act as a narcotic causing central nervous system depression. Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing. Oxygen deficiency may occur in the presence of high concentrations resulting in asphyxiation. Maintain oxygen levels at or above 19.5%.
Eyes	None known. Contact with rapidly expanding gas near the point of release may cause frostbite.
Skin	None known. Contact with rapidly expanding gas near the point of release may cause frostbite
Skin Absorption Hazard	No known hazard by skin absorption
Ingestion	Not an expected route of exposure
Chronic Effects	None known
Aggravated medical Conditions	Cardiovascular
Environmental Hazard	See Section 12 for additional Ecological Information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Volume %	Chemical Formula
Oxygen	7782-44-7	2%	O ₂
Carbon Dioxide	124-38-9	5%	CO ₂
Argon	7440-37-1	Balance	Ar

Additional information: Composition listed covers broad ranges rather than exact percentages for specific products.



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SECTION 4. FIRST AID MEASURES

Eye Contact	None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.
Skin Contact	None required for gas. For dermal contact or suspected frostbite, remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if contact with the product has resulted in blistering of the dermal surface or in deep tissue freezing.
Inhalation	PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, administer oxygen. Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen. Treatment should be symptomatic and supportive.
Ingestion	None under normal use. Get medical attention if symptoms occur.
Notes to Physician	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties	Extremely flammable.
Suitable Extinguishing Media	Dry chemical or CO ₂ . Water spray or fog. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED
Hazardous Combustion Products	Carbon monoxide. Carbon dioxide (CO ₂).
Explosion Data	None
Sensitivity to Mechanical Impact	Yes
Sensitivity to Static Discharge	Rapid flame propagation and flashback possible. May form explosive mixtures with air. Continue to cool fire exposed cylinders until flames are extinguished. Cylinders may rupture under extreme heat.
Specific Hazards Arising from the Chemical	Damaged cylinders should be handled only by specialists.
Protective Equipment and Precautions for Firefighters	If possible, stop the flow of gas. Do not extinguish the fire until supply is shut off as otherwise an explosive-ignition may occur. If the fire is extinguished and the flow of gas continues, use increased ventilation to prevent build-up of explosive atmosphere. Ventilation fans must be explosion proof. Use non-sparking tools to close container valves. Isolate spill or leak area for at least 100 meters (330 feet) in all directions. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Vapors may travel to source of ignition and flash back. For massive fire, use



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	<p>unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.</p> <p>Use water spray to cool surrounding containers. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers.</p> <p>As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.</p>
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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level.
Environmental Precautions	Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Prevent spreading of vapors through sewers, ventilation systems and confined areas.
Methods for Containment	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or
Methods for Cleaning Up	Return cylinder to Puregas.

SECTION 7. HANDLING AND STORAGE

Handling	<p>Ground and bond all lines and equipment associated with product system. All equipment should be non-sparking and explosion proof. Remove all sources of ignition. Use only in ventilated areas. "NO SMOKING" signs should be posted in storage and use areas.</p> <p>Never attempt to lift a cylinder by its valve protection cap. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping.</p> <p>Use an adjustable strap wrench to remove over-tight or rusted caps. Never insert an object (e.g.wrench, screwdriver, pry bar,etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.</p> <p>Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit.</p> <p>For additional recommendations consult Compressed Gas Association.</p>
Storage	<p>Outside or detached storage is preferred. Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders</p>



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from being stored for excessive periods of time. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Shielding Gas			
Occupational exposure Hazards	As this Shielding gas is a simple asphyxiant, avoid areas where spillage has taken place. Only enter once testing has proved the atmosphere to be safe.		
Engineering control measures	Engineering control measures are preferred to reduce exposure to Oxygen depleted atmospheres. General methods include forced-draught ventilation, separate from other exhaust ventilation systems. Ensure that sufficient fresh air enters at, or near, floor level.		
Personal Protection	Self-contained breathing apparatus should always be worn when entering an area where Oxygen depletion may have occurred. Safety goggles, gloves and shoes or boots should be worn when handling cylinders.		
Skin	No know effect		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<u>Argon</u>	
Chemical symbol	Ar
Molecular Weight	39,948
Specific Volume @ 20°C & 101,325 kPa	603,7 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	1,380
Colour	None
Taste	None
Odour	None
<u>Carbon Dioxide</u>	
Chemical symbol	CO ₂
Molecular Weight	44,01
Specific Volume @ 20°C & 101,325 kPa	547 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	1,53
Colour	None
Taste	None
Odour	None
<u>Oxygen</u>	
Chemical symbol	O ₂
Molecular Weight	32,00
Specific Volume @ 20°C & 101,325 kPa	755 ml/g
Relative density of gas @ 101,325 kPa (Air = 1)	1,053
Colour	None
Taste	None
Odour	None



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SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	The dilution of Oxygen concentration in the atmosphere to levels which cannot support life. Never use cylinders as rollers or supports, or for any other purpose than the storing of Shielding gas. Never expose the cylinders to excessive heat, as this may cause sufficient build-up of pressure to rupture the cylinders.
Incompatible materials	As dry Shielding gas in inert it may be contained in systems constructed of any of the common metals which have been designed to safely withstand the pressures involved.
Hazardous decomposition products	None

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity	No known effect
Skin & eye contact	No known effect
Chronic Toxicity	No known effect
Carcinogenicity	No known effect
Mutagenicity	No known effect
Reproductive Hazards	No known effect

(For further information see Section 3. Adverse Health Effects)

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	The environmental impact of this product has not been fully investigated.
Ozone depletion potential; ODP; (R-11 = 1):	Does not contain ozone depleting chemical (40 CFR Part 82).
Chemical Name	Shielding Gas
Log Pow	2.8

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal methods	Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Puregas for proper disposal.
Contaminated packaging	Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

DOT	
Hazard class	2.2
Subsidiary Class	None
UN-Number	UN1956
Description	UN1956 compressed gas, Non-flammable gas
Emergency no.	+27 11 903 9760

SECTION 15. OTHER INFORMATION

Prepared By	Puregas (Pty) Ltd 4 Liebenberg Street, Alrode, Gauteng, 1451
Issue Date	20 Feb-2013
Revision Date	-
Revision Number	0
Revision Note	Initial Release
NFPA	
Health Hazard	0
Flammability	4
Stability	0

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