



MATERIAL SAFETY DATA SHEET

ARGOSHIELD

DATE: February 2013

1 PRODUCT AND COMPANY IDENTIFICATION

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Product Name	Shielding gas
Chemical Formula	Ar plus CO2
Company Identification	Les Gaz Industriels Ltd Pailles Road GRNW Mauritius Tel. No: +230 212 8306
Emergency Number	Refer page 3

2 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Formula	Ar plus CO2
Trade Names	Argoshield
Colour coding	Argoshield: Dark blue body with Dark blue valve guard

Valves	Brass 5/8 inch BSP right hand female valve.
UN No.	1956
ERG No	121
Hazchem Warning	2 C Non-flammable gas

3 HAZARDS IDENTIFICATION

Main Hazards	The above listed Shielding gas mixture does not support life. It can act as simple asphyxiant by diluting the concentration of oxygen in the air to below levels necessary to support life.
Adverse Health effects.	The carbon dioxide component, of the above mixture could act as a stimulant and a depressant on the central nervous system. Increases in heart rate and blood pressure have been noted at a concentration of 7.6 percent, and dyspnea (laboured breathing), headache, dizziness and sweating occur if exposure at that level is prolonged.
Chemical hazards	The Argon component of the above gas mixture is extremely inert and forms no known chemical compound. However, Carbon dioxide is relatively non-reactive and non-toxic. It will not burn or support combustion. In the presence of moisture it can aggressively bring about corrosion in a variety of steel materials.
Biological Hazards	The greatest physiological effect Carbon dioxide is to stimulate the respiratory centre, thereby controlling the volume and rate of respiration. It is able to cause dilation and constriction of blood vessels and is a vital constituent of the acid-base mechanism that controls the pH of the blood.
Vapour inhalation	At concentrations of approximately 10 percent and above, unconsciousness can result in one minute or less. Impairment of performance has been noted during prolonged exposure to concentrations of 3% carbon dioxide even when the oxygen concentrations were 21%.
Eye Contact	No known effect.
Skin Contact	No known effect.
Ingestion	See "Vapour inhalation" above

4 FIRST AID MEASURES

Prompt medical attention is mandatory in all cases of overexposure to any of the Shielding gases. Rescue personnel should be equipped with self-contained breathing apparatus. Relatively low concentrations of carbon dioxide may cause headache, sweating, rapid breathing, increased heartbeat, shortness of breath, dizziness, mental depression, visual disturbances and shaking. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be removed to an uncontaminated area, and given mouth-to-mouth resuscitation and supplemental oxygen.

Skin contact No known effect.

Ingestion (See Section 3 above)

5 FIRE FIGHTING MEASURES

Extinguishing media As both Argon and Carbon dioxide do not support combustion, they will not contribute to the fire but could help with the extinguishing by diluting the oxygen concentration of the air by dilution to below the level to support combustion.

Specific hazards This Shielding gas does not support life. It can act as simple asphyxiant by diluting the concentration of oxygen in the air below levels to support life.

Emergency actions If possible, shut off the source of excess Shielding gas. Evacuate area. All cylinders should be removed from the vicinity of the fire. Cylinders that cannot be removed should be cooled with water from a safe distance to prevent the build-up of excessive pressure. Cylinders which have been exposed to excessive heat should be clearly identified and returned to the supplier.

Protective clothing Self-contained breathing apparatus. Safety gloves and safety shoes, or boots, should be worn when handling cylinders.

Environmental precautions This Shielding gas is heavier than air and could accumulate in low-lying areas. Care should be taken when entering a potentially oxygen-deficient environment. If possible, ventilate the affected area.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Do not enter any area where Shielding gas has been spilled unless tests have shown that it is safe to do so.
Environmental Precautions	Shielding gas does not pose a hazard to the environment.
Small spills	Shut off the source of escaping Shielding gas. Ventilate the area.
Large spills	Evacuate the area. Shut off the source of the spill if this can be done without risk. Restrict access to the area until completion of the clean-up procedure. Ventilate the area using forced draught if necessary.

7 HANDLING AND STORAGE

Do not allow cylinders to slide or come into contact with sharp edges. Shielding gas cylinders may be stacked horizontally provided that they are firmly secured at each end in first-out inventor system to prevent stored for excessive periods of time. Keep out of reach of children.

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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure hazards: As Shielding gases are simple asphyxiants, 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 known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

Argon

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

Carbon Dioxide

Chemical Symbol	CO ₂
Molecular Weight	44,011
Specific volume @ 20°C & 101,325 kPa	547 ml/g
Relative density of gas @ 101,325 kPa (Air=1)	1,53
Colour	None
Taste	Acidic
Odour	None

10 STABILITY AND REACTIVITY

Conditions to avoid The dilution of the 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 gases. 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 gases are inert, they may be contained in systems constructed of any of the common metals which have been designed to safely withstand the pressures involved.

Hazardous No known effect.

Decomposition Products

11 TOXICOLOGICAL INFORMATION

Acute Toxicity	TLV 5000 vpm (CO ₂)
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

12 ECOLOGICAL INFORMATION

The Shielding gases are heavier than air and can cause pockets of oxygen-depleted atmosphere in low-lying areas. They do not pose a hazard to the ecology.

13 DISPOSAL CONSIDERATIONS

Disposal Methods Small amounts may be blown to the atmosphere under controlled conditions. Large amounts should only be handled by the gas supplier.

Disposal of packaging The disposal of containers must only be handled by the gas supplier.

14 TRANSPORT INFORMATION

ROAD TRANSPORTATION



UN No.	1956
ERG No	121
Hazchem warning	2C Non-flammable gas

SEA TRANSPORTATION

IMDG	1956
Class	2.2
Label	Non-flammable gas

AIR TRANSPORTATION

ICAO/IATA Code	1956
Class	2.2
Packaging instructions	
- Cargo	200
- Passenger	200
Maximum quantity allowed	
- Cargo	150 kg
- Passenger	75 kg

15 REGULATORY INFORMATION

EEC Hazard class	Non-flammable gas
Risk phrases	R 44 Risk of explosion if heated under confinement.
Safety phrases	S2 Keep out of reach of children S9 Keep container in a well ventilated place S15 Keep away from heat S37 Wear suitable gloves S39 Wear eye / face protection S51 Use only in well ventilated areas

National legislation None
Refer to SABS 0265 for explanation of the above

16 OTHER INFORMATION

Bibliography
Compressed Gas Association, Arlington, Virginia
Handbook of Compressed Gases - 3rd Edition
Matheson. Matheson Gas Data Book - 6th Edition
SABS 0625 - Labelling of Dangerous Substances

17 EXCLUSION OF LIABILITY

Information contained in this publication is accurate at the date of publication. The company does not accept liability arising from the use of this information, or the use, application, adaptation or process of any product described herein.



MATERIAL SAFETY DATA SHEET (MSDS) SHIELDING GASES (Ar/CO2)

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