



1 PRODUCT AND COMPANY IDENTIFICATION

Product Name	Argon Hydrogen Mixture Gases
Chemical Formula	H ₂ plus Ar
Trade Names	Stainshield TIG Plasmashield
Colour codings	All of the above have silver bodies and valve guards with red shoulders, with relevant decals or stencilling to identify the product.
Valves	All of the above have Brass 5/8 inch BSP left hand female valves fitted.
Company Identification	Rakeeth Industrial Gases Co LLC 483/1 Street Al Sajaa industrial area, Sharjah, UAE Mob No: 0565264603 Tel No: 065652161
EMERGENCY NUMBER	997 CIVIL DEFENCE UAE (24Hrs)

2 HAZARDS IDENTIFICATION

Main Hazards

All cylinders are portable gas containers, and must be regarded as pressure vessels at all times. The above listed Shielding gas mixtures do not support life. They can act as simple asphyxiants by diluting the concentration of oxygen in the air to below levels necessary to support life.

Adverse Health effects

Inhalation of Shielding gases in excessive concentrations can result in dizziness, nausea, vomiting, loss of consciousness and death.

Chemical hazards

The Argon component is inert, but the Hydrogen becomes highly reactive under excessive conditions of temperature and pressure.

Biological Hazards

No known effect.

Vapour inhalation

As these listed Shielding gases act as simple asphyxiants death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations, unconsciousness and death may occur in seconds without warning.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Names	Hydrogen plus Argon
UN No	1954
ERG No	115
Hazchem Warning	2 A Flammable gas

4 FIRST AID MEASURES

Eye contact	No known effect.
Skin contact	No known effect.
Ingestion	(See Section 3 above)

Prompt medical attention is mandatory in all cases of overexposure to Shielding gases. Rescue personnel should be equipped with self-contained breathing apparatus. 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.

5 FIRE FIGHTING MEASURES

Extinguishing Media

Although the Argon component of these Shielding gases is inert, the Hydrogen component could separate and form pockets of highly

flammable or explosive Hydrogen/air mixtures. These could be found entrapped in high-lying enclosed areas.

Specific Hazards

Do not extinguish the fire unless the leakage can be stopped immediately. It may form explosive gas mixtures with air. This is a simple asphyxiant.

Emergency Actions

If possible, shut off the ignition at source. Evacuate area. Post warnings to prevent persons from approaching with lit cigarettes or open flames. Using water, keep all cylinders in the vicinity of the fire cool. Remove cylinders from the vicinity of the fire if possible. Remove all cylinders with signs of overheating to a safe area. Keep cool.

Protective Clothing

Exposed fire-fighters should wear approved self-contained breathing apparatus with full face mask.

Environmental Precautions

As the Hydrogen component is lighter than air, ensure that it is not entrapped in confined spaces otherwise this could lead to the formation of highly explosive gas-air mixture. Ventilate all confined spaces using forced-draught if necessary. Ensure that all electrically powered equipment is flameproof.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

As Shielding gases are simple asphyxiants, care should be taken when entering confined spaces where leaks have occurred. Do NOT enter any potentially hazardous area with any source of ignition such as a lit cigarette or match.

Environmental Precautions

Shielding gases do not pose a hazard to the environment. An explosive gas-air mixture could be formed when leaks occur, so eliminate all forms of ignition.

Small Spills

Small leaks should be stopped by shutting off the source of supply, e.g. closing the valve on the cylinder, or tightening the gland nut. If unable to stop small leaks the cylinder should be moved into the open well away from any source of ignition.

Large Spills

Stop the source if it can be done without risk. Eliminate all sources of ignition and static discharges. Restrict access to the area until completion of the clean-up procedure. Post relevant warning signs. Wear adequate protective clothing when working near the source of the leak. Ventilate the area using forced draught if necessary. Ensure that all equipment is flameproof.

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 to prevent rolling. Ensure equipment is adequately earthed. Conspicuous signs should be posted in storage area forbidding smoking or the use of naked lights.

Use the "first in - first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Compliance with all relevant legislation is essential. Keep away from children.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Hazards

No known effect.

Engineering Control Measures

Engineering control measures are preferred reduce exposures. General methods include mechanical ventilation, process or personal enclosure, and control of process conditions. Administrative controls



and personal protective equipment may also be required. Use a suitable flameproof ventilation system separate from other exhaust ventilation systems. Exhausts directly to the outside. Supply sufficient replacement air to make up for air removed by exhaust system.

Personal Protection

Use self-contained breathing apparatus when fighting large fires.

Eyes

Use safety glasses when working with cylinders.

Hands

Use suitable protective gloves when working with cylinders.

Skin

No known effect.

9 PHYSICAL AND CHEMICAL PROPERTIES

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
Flammable limits in air (by volume)	---
Colour	None
Taste	None
Odour	None

Hydrogen

Chemical Symbol	H ₂
Molecular Weight	2,016
Specific volume @ 20°C & 101,325 kPa	11 976 ml/g
Relative density of gas @ 101,325 kPa (Air=1)	0,08989
Flammable limits in air (by volume)	4,0 – 75%
Colour	None
Taste	None
Odour	None

Odour

10 STABILITY AND REACTIVITY

Conditions to avoid

Overheating of cylinders! Keep sparks/flames away from cylinder, and under no circumstances allow a torch flame to come into contact with any part of the cylinder. Never test for leaks with a flame. Use soapy water when testing for leaks. Never use cylinders as rollers or supports, or for any other purpose than storing of Shielding gases.

Incompatible Materials

The Shielding gases are non-corrosive and may be contained at ambient temperatures by most common metals used in installations designed to have sufficient strength for working pressures involved.

Hazardous Decomposition Products

No hazardous compounds are formed when Hydrogen/air mixtures burn

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)

12 ECOLOGICAL INFORMATION

As these Shielding gases are heavier than air they 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. No sources of ignition should be in the vicinity. 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.	1954
ERG No	115
Hazchem warning	2A Flammable gas

SEA TRANSPORTATION

IMDG	1954
Class	2.1
Label	Flammable gas

AIR TRANSPORTATION

ICAO/IATA Code	1954
Class	2.1
Packaging instructions	
- Cargo	200
- Passenger	Forbidden
Maximum quantity allowed	
- Cargo	150 kg
- Passenger	Forbidden