

AIR LIQUIDE AMERICA SPECIALTY GASES LLC  
 Air\_Liquide\_America\_Specialty\_Gases,\_LLC

MATERIAL SAFETY DATA SHEETS  
 DATE: 2/26/08

SUPPLIER ADDRESS: 6141 EASTON ROAD, BLDG 1  
 PO BOX 310  
 PLUMSTEADVILLE, PA 18949-0310  
 EMERGENCY PHONE: (215) 766-8861  
 NUMBER

1. CHEMICAL PRODUCT

PRODUCT NAME: HYDROGEN IN ARGON                      SYNONYMS: None

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient Name	Formula	CAS#	Concentration	Exposure Limits (PPM)			
				ACGIH TLV	OSHA PEL	MAC	Other STEL
HYDROGEN	H2	1333-74-0	4.7001-50 PCT	S/A	S/A	S/A	S/A
ARGON	AR	7440-37-1	BALANCE	S/A	S/A	S/A	S/A

Note: S/A = SIMPLE ASPHYXIANT

3. HAZARD IDENTIFICATION

\*\*\* EMERGENCY OVERVIEW \*\*\*  
 Flammable high pressure gas.  
 Can form explosive mixtures with air.  
 May ignite if valve is open.  
 Burns with an invisible flame.  
 Can cause rapid suffocation.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation

ACUTE EFFECTS: Mixture acts as a simple asphyxiant by displacing air necessary for life. Symptoms include rapid respiration, muscular incoordination, fatigue, dizziness, nausea, vomiting, unconsciousness, and death.

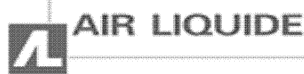
CHRONIC EFFECTS: None known

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US Only):

- NTP - No
- IARC MONOGRAPHS - No
- OSHA REGULATED - No



4. FIRST AID MEASURES

INHALATION: Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

EYE CONTACT: None

SKIN CONTACT: None

INGESTION: None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: None

5. FIRE FIGHTING MEASURES

FLASH POINT: Gas

AUTOIGNITION TEMPERATURE: 400 deg. C (hydrogen)

FLAMMABLE LIMITS: Hydrogen

LOWER: 4.0

UPPER: 75

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, or halogenated gas.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. If possible, stop the product flow.

HAZARDOUS COMBUSTION PRODUCTS: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Cylinder rupture may occur under fire conditions. May form explosive mixture in air. Burns with an invisible flame.

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Remove leaking cylinder to exhaust hood or safe outdoor area. Shut off source if possible and remove source of heat.

SPECIALIZED EQUIPMENT: None

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas. Keep valve protection cap on cylinders when not in use.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation to maintain concentrations below flammable limits and to avoid asphyxiation.

PERSONAL PROTECTION

EYE/FACE PROTECTION: Safety glasses

SKIN PROTECTION: None

RESPIRATORY PROTECTION: In case of leakage, use self-contained breathing apparatus.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless

ODOR: Odorless

PHYSICAL STATE: Gas

VAPOR PRESSURE: N/Ap

VAPOR DENSITY (AIR=1): 1.32104-.7381

BOILING POINT (C): N/Ap

SOLUBILITY IN WATER: @ 0 deg. C: 0.036-.051

SPECIFIC GRAVITY (H2O=1): Gas

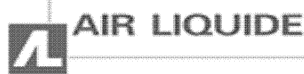
EVAPORATION RATE: Gas

ODOR THRESHOLD: .06-1.0 ppm

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas. Avoid heat, ignition sources, and oxidizers.



MATERIALS TO AVOID: Strong oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC50): NONE ESTABLISHED

LETHAL DOSE 50 (LD50): N/Ap

TERATOGENICITY: N/Ap

REPRODUCTIVE EFFECTS: N/Ap

MUTAGENICITY: N/Ap

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.

14. TRANSPORT INFORMATION

CONCENTRATION: 4.5001-49%

DOT DESCRIPTION (US ONLY):

PROPER SHIPPING NAME: Compressed gases, flammable, n.o.s.

HAZARD CLASS: 2.1 (flammable)

IDENTIFICATION NUMBER: UN1954

REPORTABLE QUANTITIES: None

LABELING: FLAMMABLE GAS

ADR/RID (EU Only): Class 2, 1F

SPECIAL PRECAUTIONS: Cylinders should be transported in a secure upright position in a well ventilated truck.

15. REGULATORY INFORMATION

OSHA: Process Safety Management:

Materials are not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemicals.

TSCA: Mixture is not listed in TSCA inventory.

SARA: The threshold planning quantity for this mixture is 10,000 lbs.

EU NUMBER: N/Av

NUMBER IN ANNEX 1 OF DIR 67/548: Mixture is not listed in annex 1.

EU CLASSIFICATION: N/Ap

R: As

S: 9,23

16. OTHER INFORMATION

OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

ABBREVIATIONS:

N/Ap - Not Applicable

N/Av - Not Available

SA - Simple Asphyxiant

NE - None Established

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