

**HYDROGEN containing Compressed Gas Mixture,  
Flammable**
**AL621**


Label 2.1 : flammable gas.

**1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

**Trade name** : HYDROGEN containing Compressed Gas Mixture,  
Flammable  
**MSDS Nr** : AL621  
**Use** : Industrial applications.  
**Company identification** : Air Liquide Australia Limited  
 Level 9 / 380 St. Kilda Road  
 Melbourne VIC 3004 Australia  
 Tel: + 61 3 9697 9888  
 Fax: + 61 3 9690 7107  
 ALAEnquiries@AirLiquide.com  
**Emergency phone nr** : 1800 812 588

**2 HAZARDS IDENTIFICATION**

**Hazard classification** : Not classified as hazardous according to NOHSC criteria.  
 Classified as a dangerous good by the criteria of the ADG code.  
**Hazards identification** : Compressed gas.  
 In high concentrations may cause asphyxiation.  
**R Phrase(s)** : R12 : Extremely flammable.  
**S Phrase(s)** : S9 : Keep container in a well-ventilated place. - S16 : Keep away from sources of  
 ignition - No smoking. - S33 : Take precautionary measures against static  
 discharges.

**3 COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Preparation		Preparation.			
Substance name	Contents	CAS No	EC No	Annex No	Classification
Hydrogen	: >= 8.8 < 100 %	1333-74-0	215-605-7	001-001-00-9	F+; R12
Helium	: < 100 %	7440-59-7	231-168-5	----	
Argon	: < 100 %	7440-37-1	231-147-0	----	
Carbon dioxide	: < 100 %	124-38-9	204-696-9	----	
Nitrogen	: < 100 %	7727-37-9	231-783-9	----	

**4 FIRST AID MEASURES**

**First aid measures**  
**- Inhalation** : In high concentrations may cause asphyxiation. Symptoms may include loss of  
 mobility/consciousness. Victim may not be aware of asphyxiation.  
 Remove victim to uncontaminated area wearing self contained breathing  
 apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if  
 breathing stopped.



# MATERIAL SAFETY DATA SHEET

Page : 2 of 4

Revised edition no : 1

Date : 8 / 9 / 2010

Supersedes : 0 / 0 / 0

## HYDROGEN containing Compressed Gas Mixture, Flammable

AL621

### 5 FIRE-FIGHTING MEASURES

- Specific hazards** : Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products** : None.
- Extinguishing media**
- Suitable extinguishing media : All known extinguishants can be used.
- Specific methods** : If possible, stop flow of product.  
Move away from the container and cool with water from a protected position.
- Special protective equipment for fire fighters** : In confined space use self-contained breathing apparatus.

### 6 ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Evacuate area.  
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
Ensure adequate air ventilation.
- Environmental precautions** : Try to stop release.
- Clean up methods** : Ventilate area.

### 7 HANDLING AND STORAGE

- Storage** : Keep container below 50°C in a well ventilated place.
- Handling** : Suck back of water into the container must be prevented.  
Do not allow backfeed into the container.  
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.  
Refer to supplier's container handling instructions.

### 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

- Personal protection** : Ensure adequate ventilation.
- Occupational Exposure Limits** : Carbon dioxide : ILV (EU) - 8 H - [mg/m<sup>3</sup>] : 9000  
Carbon dioxide : ILV (EU) - 8 H - [ppm] : 5000  
Carbon dioxide : TLV<sup>®</sup> -TWA [ppm] : 5000  
Carbon dioxide : TLV<sup>®</sup> -STEL [ppm] : 30000

### 9 PHYSICAL AND CHEMICAL PROPERTIES

- Physical state at 20 °C** : Gas.
- Colour** : Colourless gas.
- Odour** : No odour warning properties.
- Molecular weight** : 28
- Melting point [°C]** : -210
- Boiling point [°C]** : -196
- Critical temperature [°C]** : -147
- Vapour pressure [20°C]** : Not applicable.
- Relative density, gas (air=1)** : 0.97
- Relative density, liquid (water=1)** : Not applicable.
- Solubility in water [mg/l]** : 20

**HYDROGEN containing Compressed Gas Mixture,  
Flammable****AL621****10 STABILITY AND REACTIVITY****Stability and reactivity** : Stable under normal conditions.**11 TOXICOLOGICAL INFORMATION****Toxicity information** : No known toxicological effects from this product.**12 ECOLOGICAL INFORMATION****Global warming potential [CO2=1]** : Contains greenhouse gas(es) not covered by 842/2006/EC**13 DISPOSAL CONSIDERATIONS****General** : Do not discharge into any place where its accumulation could be dangerous.  
To atmosphere in a well ventilated place.  
Contact supplier if guidance is required.**14 TRANSPORT INFORMATION****UN No.** : 1954  
**Labelling ADG** : Label 2.1 : flammable gas.  
**H.I. nr** : 23  
**Proper shipping name** : COMPRESSED GAS, FLAMMABLE, N.O.S.  
**HAZCHEM - Emergency Action Code** : HAZCHEM  
: HAZCHEM\_C  
**- ADG Class** : 2  
**- ADG Classification code** : 1 F  
**Other transport information** : Avoid transport on vehicles where the load space is not separated from the driver's compartment.  
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.  
Before transporting product containers :  
- Ensure that containers are firmly secured.  
- Ensure cylinder valve is closed and not leaking.  
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.  
- Ensure valve protection device (where provided) is correctly fitted.  
- Ensure there is adequate ventilation.  
- Compliance with applicable regulations.**15 REGULATORY INFORMATION****EC Classification** : Not included in Annex I.  
Not classified as dangerous preparation/substance.  
**EC Labelling** : No EC labelling required.  
**Symbol(s)** : F+ : Extremely flammable  
**R Phrase(s)** : R12 : Extremely flammable.  
**S Phrase(s)** : S9 : Keep container in a well-ventilated place.  
S16 : Keep away from sources of ignition - No smoking.  
S33 : Take precautionary measures against static discharges.



# MATERIAL SAFETY DATA SHEET

Page : 4 of 4

Revised edition no : 1

Date : 8 / 9 / 2010

Supersedes : 0 / 0 / 0

**HYDROGEN containing Compressed Gas Mixture,  
Flammable**

**AL621**

## 16 OTHER INFORMATION

Asphyxiant in high concentrations.

Keep container in a well-ventilated place.

Do not breathe the gas.

Ensure all national/local regulations are observed.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

### DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

**End of document**