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MATERIAL SAFETY DATA SHEET

Product Name:

ACETYLENE,
Compressed, Dissolved
(C₂H₂)

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Label 2.1 : flammable gas.

IDENTIFICATION

Chemical Name: Acetylene (dissolved)
Synonyms: Ethyne, Ethine
UN Number: 1001
Poisons Schedule Number: None allocated
EPG (Emergency Procedure Guide): AS 1678
G.T. EPG. (Group Text. Emergency Procedure Guide): AS 1678 2A1

Use: Acetylene is used as a fuel gas for oxy-welding, cutting, heating, flame hardening, flame cleaning, spalling of concrete, etc.

HAZARDS IDENTIFICATION

Dangerous Goods Class and Subsidiary Risk: 2.1
HSNO Classification: 2.1.1A

Hazard Statement: Extremely flammable gas.
Explosive; fire, blast or projection hazard.

Precautionary Statements: Read before label before use.
Read material safety data sheet before use.
Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Store in a well ventilated place.
Do not subject to any rough handling (grinding/shock/friction/banging).
Explosion risk in case of fire.
Fight fire with normal precautions from a reasonable distance.
Take precautionary measures against static discharges.

COMPOSITION

Ingredients

Chemical Entity	CAS Number	Proportion
Acetylene	74-86-2	98%

FIRST AID MEASURES

Health Effects

Acute

Swallowed: Not applicable to gases.

Eye: Not irritating to the eye.

Skin: Not irritating to the skin.

Inhaled: Asphyxiant in high concentrations. Low concentrations (10-20% in air) cause symptoms similar to those of being intoxicated. Higher concentrations so as to exclude an adequate supply of oxygen to the lungs, causes unconsciousness. Symptoms of asphyxiation include rapid and gasping respiration, rapid fatigue and vomiting.

Chronic

Long term exposure to acetylene has no known health effects.

First Aid

Inhaled:

Call doctor. If victim is conscious: Move to uncontaminated area to breathe fresh air. Keep warm and quiet. If victim is unconscious: Move to uncontaminated area and give assisted respiration. When normal breathing is restored, treatment as above. Continued treatment should be symptomatic and supportive.

Skin Contact:

Remove contaminated clothing and shoes immediately.

Eye Contact:

If eyes become affected gently flood with tap water for at least 15 minutes, call doctor

Advice to Doctor

Advise doctor that victim has been exposed to an oxygen deficient atmosphere and exposed to acetylene which is a known anaesthetic.

General:

Rescue personnel should be aware of extreme fire hazard associated with Acetylene rich atmospheres. And Explosion risk in case of fire.

FIRE FIGHTING MEASURES

Flammability:

Highly flammable. Avoid naked lights and ignition sources.

Fire/Explosion Hazard:

Highly flammable. (Note: Acetylene can ignite by decomposition above 200 kPa). Forms an explosive mixture with air. (Requires very low ignition energy. Fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force). Call Fire Brigade. Advise location, material and quantity. If escaping gas has ignited, allow it to burn under supervision. Cut off source of gas if safe to do so. Cool cylinders with water from a protected location. Do not approach cylinders suspected to be hot. Remove cool cylinders from the path of the fire. If unable to keep containers cool, evacuate the area.

Extinguishing Media:

Water fog or fine water spray.

Hazchem Code:

2 SE

Recommended Protective Clothing:

Wear SCBA and Structural fire fighting uniform when handling cylinders.

ACCIDENTAL RELEASE MEASURES

Personal Protection:

Wear suitable hand, body and head protection. In areas where equipment failure may cause an immediate high concentration of acetylene, approved self-contained full face respiratory equipment should be readily available.

Spills and Disposal:

Avoid naked lights or ignition sources. Stop leak if safe to do so. Contact Air Liquide for emergency assistance. If leak is in equipment, purge thoroughly with inert gas prior to repair attempts. Note: Acetylene is heavier than air and will accumulate in low points. Low level ventilation may be required.

Reference Guide:

Standard SNZ HB 76:2008 Dangerous Goods – Initial Emergency Response Guide.

General:

Only experienced and properly instructed personnel should handle compressed gases. Cylinder contents and identification labels provided by the supplier must not be removed or defaced. Colour coding should not be the only criterion used for content identification.

HANDLING AND STORAGE

Handling

Flammability:

Highly flammable. (Note: Acetylene can ignite by decomposition above 200 kPa). Forms an explosive mixture with air. (Requires very low ignition energy. Fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force). Call Fire Brigade. Advise location, material and quantity. Evacuate bystanders from the area. If escaping gas has ignited, allow it to burn under supervision. Cut off source of gas if safe to do so. Cool cylinders with water from a protected location. Do not approach cylinders suspected to be hot. Remove cool cylinders from the path of the fire. If unable to keep containers cool, evacuate the area.

General:

Only experienced and properly instructed personnel should handle compressed gases. Cylinder contents and identification labels provided by the supplier must not be removed or defaced. Colour coding should not be the only criterion used for content identification.

Approved Handlers:

Approved handlers are required if more than 100 m³ is stored on site.

Storage

Separation:

Storage of compressed gas cylinders shall be in compliance with New Zealand regulations. Cylinders shall be stored in a cool, dry, well ventilated area out of direct sunlight and away from heat and ignition sources. No part of cylinders shall be exposed to temperatures above 50°C. Cylinders shall be stored upright on a level, fireproof floor, secure in position and protected from damage. Full cylinders shall be stored separately from empties. Cylinders should be moved by hand-truck or cart designed for that purpose. Avoid any contact with oil or grease particularly to the cylinder valve.

Spills and Disposal:

Avoid naked lights or ignition sources. Stop leak if safe to do so. Contact Air Liquide for emergency assistance. If leak is in equipment, purge thoroughly with inert gas prior to repair attempts. Note: Acetylene is heavier than air and will accumulate in low points. Low level ventilation may be required.

EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Standards:**

Simple asphyxiant.

Engineering Controls:

Do not reticulate at pressure greater than 150 kPa. (Acetylene can ignite by decomposition above 200 kPa). Provide ventilation to area of use to prevent accumulation of acetylene at flammable concentrations. Never use acetylene in direct contact with unalloyed copper, silver and mercury (forms explosive acetylide compounds with copper, mercury, silver and brasses containing more than 70% copper or brazing materials containing silver or copper).

Personal Protection:

Personnel engaged in the movement of cylinders shall be provided with safety footwear and leather or PVC gloves. Full cover overalls and safety glasses recommended. In areas where equipment failure may cause an immediate high concentration of acetylene, approved self-contained full face respiratory equipment should be readily available.

PHYSICAL AND CHEMICAL PROPERTIES**Physical Properties**

Appearance:	Colourless, slight 'garlic' odour	Flashpoint:	Not applicable
Boiling Point:	-84°C	Flammability Limits (in air):	2.2% - 85%
Vapour Pressure:	Not applicable	Solubility in Water (at 0°C):	1.72 m ³ /kg

Other Properties

Relative Density (at 15°C) (Air = 1):	0.908	Density of Gas (101.3 kPa, 15°C):	1.113 kg/m ³
Molecular Weight:	26.04	Critical Temperature:	35.2°C
Auto ignition Temp:	325°C		

STABILITY AND REACTIVITY**Flammability:**

Extremely flammable gas. Explosive; fire, blast or projection hazard.

Materials Compatibility:

Not Applicable.

TOXICOLOGY INFORMATION

No known toxicological effect from this product.

ECOLOGICAL INFORMATION

No known ecological damage caused by this product.

DISPOSAL CONSIDERATIONS

Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where it's accumulated could be dangerous.

TRANSPORT INFORMATION

UN Number:	1001
Proper Shipping Name:	ACETYLENE, DISSOLVED
Dangerous Goods Class and Subsidiary Risk:	2.1.1A
Packing Group:	Not applicable
Hazchem Code:	2 SE
Other Information:	Avoid transport on vehicles where the load 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: <ul style="list-style-type: none">• Ensure that containers are firmly secured.• Ensure cylinder valve is closed and not leaking.• Ensure there is adequate ventilation.• Compliance with applicable regulations.

REGULATORY INFORMATION

ERMA Register Approval No: HSR000987

HSNO Controls: Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001.
Hazardous Substances (Disposal) Regulations 2001.
Hazardous Substances (Personnel Qualifications) Regulations 2001.
Hazardous Substances (Emergency Management) Regulations 2001.
Hazardous Substances (Identification) Regulations 2001.
Hazardous Substances (Compressed Gases) Regulations 2004.
Hazardous Substances (Tank Wagon and Transportable Containers) Regulations 2004.
Schedule 10 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.
Schedule 12 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004

Approved Handlers:

Approved handlers are required if more than 100 m³ is stored on site.

OTHER INFORMATION

Cylinder Colour: AS 4484-2004 Claret PMS 505C
Cylinder Valve Outlet: AS 2473 Type 20.

References:

- . L'Air Liquide Gas Encyclopaedia - Elsevier Scientific Publishing Co. Amsterdam
- . Cheminfo Database
- . New Zealand Code for the Transport of Dangerous Goods by Road and Rail
- . NHMRC Threshold Limit Values - Commonwealth Dept Health
- . SAA Safe Storage and Handling Information Cards
- . SAA Emergency Procedure Cards
- . Matheson Gas Data Book, 6th Edition, Matheson 1980
- . Canadian Liquid Air Montreal, Canada - Gas Products Safety Data Sheets
- . AS 1894 Code of Practice for Safe Handling of Cryogenic fluids
- . NZCIC Code of Practice – Preparation of Safety Data Sheets

END MSDS

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

This MSDS has been prepared in accordance with NZCIC Code of Practice – Preparation of Safety Data Sheets.

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