Acetylene

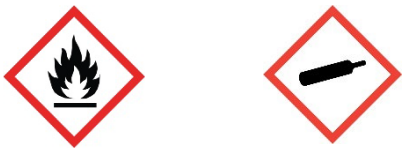
Section 1: IDENTIFICATION of the MATERIAL and SUPPLIER

GHS Product Identifier	Acetylene
Product Name:	ACETYLENE
Chemical Name:	Acetylene
Synonym(s):	Dissolved Acetylene, Ethyne.
Uses:	Fuel gas. Industrial applications.

Supplier Name:	Speed Gas Pty Ltd
Address:	49 Chard Road, Brookvale, NSW 2100
Telephone:	1300 GAS NOW, 02 9907 7999
Fax:	02 9907 7666
Emergency:	24hr EMERGENCY TELEPHONE (Australia Only) 1300 994 556
Emergency:	DIAL 000
Website:	www.speedgas.com.au

Section 2: HAZARD(S) IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA
CLASSIFIED AS DANGEROUS GOODS BY THE CRITERIA OF THE ADG CODE

GHS Classification:	Flammable Gases: Category 1 Gases Under Pressure: Dissolved Gas
Label Elements:	
Signal Word:	DANGER
Pictogram(s):	
Hazard Statements:	H220 – Extremely Flammable Gas H280 – Contains gas under pressure; May explode if heated.
Prevention Statements:	P210 – Keep away from heat/ sparks/ open flames/ hot surfaces. No Smoking.
Response Statements:	P377 – Leaking Gas Fire: Do Not extinguish unless leak can be stopped safely P381 – Eliminate all ignition sources if safe to do so.
Storage Statements:	P410 + P403 Protect from sunlight. Store in a well-ventilated place.
Disposal Statements:	None allocated
Other Hazards:	Asphyxiant. In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
ACETYLENE	74-86-2	200-816-9	>99%

Section 4: FIRST AID MEASURES

Description of First Aid Measures

Eyes: Adverse effects not expected from this product.

Inhaled: Remove from exposure, but avoid becoming a casualty. Apply artificial respiration if not breathing, preferably using an automated oxygen resuscitator. Rest and keep warm. Obtain medical attention. For advice contact Poisons Information Centre Ph: 13 11 26 or a doctor.

Skin: Adverse effects not expected from this product.

Ingestion: Ingestion is not considered a potential route of exposure.

First Aid Facilities: No information provided.

Most important symptoms and effects, both acute and delayed.

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

Immediate medical attention and special treatment needed.

Treat for asphyxia.

Section 5: FIRE FIGHTING MEASURES

Extinguishing Media: Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve. If the gas source cannot be isolated, do not extinguish the flame, since re-ignition and explosion could occur. Await arrival of emergency services or manufacturer's advisor. Drench and cool cylinders with water spray from protected area at a safe distance. If it is absolutely necessary to extinguish the flame, use only a dry chemical powder extinguisher. Do not move cylinders for at least 24 hours. Avoid shock and bumps to cylinders

Special hazards arising from the substance or mixture:

Extremely flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches /tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

Advice for Firefighters: Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers

suspected of being hot. This material is capable of forming explosive mixtures in air.

Hazchem Code: 2SE

2 – Fine Water Spray

S – Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Dilute spill and run off.

E – Evacuation of people in the immediate vicinity should be considered.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures.

Non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation.
If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS.

Environmental Precautions:

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

Methods of cleaning up:

Stop the flow of material if this is without risk. If the leak is irreparable carefully move to a safe and well ventilated area. Allow gas to escape to atmosphere. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated. Do not attempt to repair leaking valve or cylinder safety devices.

Reference to other sections:

See Section 8 for Exposure Controls and Section 13 for disposal considerations

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling.

Use safe work practices to avoid inhalation. Use appropriate personal protective equipment (see Section 8). Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement. Contains gas under pressure. Avoid breathing gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. The uncontrolled release of a gas under pressure may cause physical harm. Never "sniff" acetylene as it may ignite spontaneously. Instead, carefully inspect the outlet and if there are any signs of dirt, blow it out with a jet of clean compressed air or nitrogen

Conditions for safe storage, including any incompatibilities.

Do not store near incompatible substances or ignition sources. Store cylinders below 45ºC upright in a secure enclosure, preferably outside of buildings in a well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), protected from direct sunlight. Secure cylinders by chains or similar device to prevent falling over. Keep away from vehicular traffic and other thoroughfares. Post "No Smoking or Open Flames" signs in the storage areas. Refer to applicable legislation on flammable storage quantity restrictions. Never transfer acetylene to another cylinder or other container.

Specific end use(s): No information provided.

8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters.

Exposure Standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m^3	ppm	mg/m^3
Acetylene	SWA (Aus)	Asphyxiant			

Biological limits: No biological limit values have been entered for this product.

Exposure Controls.

Engineering Controls: Avoid Inhalation. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye/Face: Wear Safety Glasses

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn.

Body: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Respiratory: Where an inhalation risk exists use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties.

Appearance:	Colourless gas
Odour:	Odourless
Flammability:	Extremely Flammable
Flash Point:	< 23^{o}C
Boiling Point:	-84^{o}C
Melting Point:	Not available
Evaporation Rate:	Not applicable
pH:	Not applicable.
Specific gravity:	Not applicable.
Solubility in Water:	Soluble
Vapour Pressure:	4700 kPa @ 25^{o}C
Upper explosion limit:	80% to 85%
Lower explosion limit:	2.5%
Partition Coefficient:	Not available
Auto-Ignition Temperature:	305^{o}C
Decomposition Temperature:	Not available
Viscosity:	Not available
Explosive Properties:	Not available
Oxidising Properties:	Not available
Odour Threshold:	Not available

Other Information

Critical temperature:	36.3^{o}C (dissolved in acetone and porous medium)
Vapour Density:	0.906 (Air=1)
% Volatiles:	100%
Critical pressure:	6,242 kPa

Section 10: STABILITY AND REACTIVITY

Reactivity.

Forms explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper.

Chemical Stability.

Stable under recommended conditions of storage. However, sensitive to heat or shock and may become explosive.

Possibility of Hazardous Reactions.

Polymerizes with evolution of heat. Avoid contact with curing agents, accelerators, and/or initiators.

Conditions to Avoid.

Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

Incompatible Materials.

Incompatible with oxidising agents (e.g. hypochlorites), copper, copper alloys (>70% copper), silver and mercury to form explosive acetylides. May decompose violently at high temperatures and/or pressures or in the presence of a

catalyst. Hazardous by-products may be produced when this gas/gas mixture is used in welding, cutting and associated processes.

Hazardous Decomposition Products.

May evolve toxic gases if heated to decomposition.

Section 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects.

Acute Toxicity:	No known toxicological effects from this product. Based on available data, the classification criteria are not met.
Skin:	Not irritating to the skin.
Eyes:	Not irritating to the eye.
Sensitisation:	Not classified as causing skin or respiratory sensitisation.
Mutagenicity:	Not classified as a mutagen.
Carcinogenicity:	Not classified as a carcinogen.
Reproductive:	Not classified as a reproductive toxin.
STOT Single Exposure:	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT Repeated Exposure:	Not classified as causing organ damage from repeated exposure.
Aspiration:	Not classified as causing aspiration.

Section 12: ECOLOGICAL INFORMATION

Toxicity.	No ecological damage is expected to be caused by this product.
Persistence and Degradability.	This product is not readily biodegradable.
Bioaccumulative Potential.	This product is not expected to bioaccumulate.
Mobility in Soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Other Adverse Effects	No information provided.

Section 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Waste disposal	Cylinders should be returned to the manufacturer or supplier for disposal of contents.
Legislation	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14: TRANSPORT INFORMATION

CLASSIFIED AS DANGEROUS GOODS BY THE CRITERIA OF THE ADG CODE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN Number	1001	1001	1001
Proper Shipping Name	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED
Transport Hazard Class	2.1	2.1	2.1
Packing Group	None Allocated	None Allocated	None Allocated

Environmental Hazards. No information provided

Special Precautions for User.

Hazchem Code	2SE
GTEPG	2A1
EMS	F-D, S-U

Other Information: Ensure cylinder is separated from driver and that outlet relief device is not obstructed.

Section 15: REGULATORY INFORMATION

Safety, Health and Environmental Regulations
Legislation Specific for the Substance or Mixture.

Poison Schedule: A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications: Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Hazard Codes: E Explosive

F+ Extremely Flammable

Risk Phrases: R5 Heating may cause explosion

R6 Explosive with or without contact with air

R12 Extremely Flammable

Safety Phrases: S9 Keep container in well ventilated place

S16 Keep away from sources of ignition – No smoking

S33 Take precautionary measures against static discharges

Inventory Listing(s): AUSTRALIA: AICS (Australian Inventory of Chemical Substances)
All components are listed on AICS, or are exempt.

Section 16: OTHER INFORMATION

Additional Information. The storage of significant quantities of gas cylinders must comply with AS4332
When using this gas/gas mixture for welding, cutting and associated processes, additional hazards may be generated by the process such as radiation, noise and

fume. Risk assessments should be made for each activity to identify and quantify the individual hazards involved. Please refer to the relevant Safety Data Sheets for the welding consumables being used or, if available, the materials being welded.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations:

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS	Globally Harmonised System
GTEPG	Group Text Emergency Procedure Guide
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m^3	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TLV	Threshold Limit Value
TWA	Time Weighted Average

[End of SDS]