

SIG SOUTHERN INDUSTRIAL GAS SDN BHD

SAFETY DATA SHEET

ACETYLENE (DISSOLVED)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name	Acetylene (Dissolved)
Synonyms	Ethyne, Ethine, Dissolved Acetylene.
Chemical Formula	C ₂ H ₂
CAS No	74-86-2
Use of Substance	Oxy-welding, cutting, heating, etc.
Manufacturer	SOUTHERN INDUSTRIAL GAS SDN. BHD. PLO 137, Kawasan Perindustrian Senai III, 81400 Senai, Johor.
Contact Number	07-598 3863
Emergency Phone Number (24 hr)	07-598 3863

2. HAZARDS IDENTIFICATION

Chemical Name	CAS No.	Classification Code	Labeling		
			H-code	Signal Word	Hazard Pictogram
Acetylene (Dissolved)	74-86-2	Flam. Gas 1 Press. Gas	H 220 H 280	Danger	

Classification of the substance Flam. Gas 1 : Flammable gases category 1
Press. Gas : Gases under pressure (Dissolved gas)

Hazard Statement H 220 : Extremely flammable gas
H 280 : Contains gas under pressure; may explode if heated.

Precautionary Statement	P210	: Keep away from heat/ sparks/ open flames/ hot surfaces – No smoking
	P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
	P381	: Eliminate all ignition sources if safe to do so.
	P403	: Store in a well-ventilated place

Other Hazards

For safety reasons, acetylene is dissolved in acetone in the gas receptacle. Vapor of the solvent is carried away as impurity when acetylene is extracted from vapor in the gas receptacle. The concentration of the solvent vapor in the gas is lower than the concentration limits to change the classification of the acetylene.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name	Ingredient	CAS Number	% volume	OSHA-PEL
Dissolved Acetylene (DA)	Acetylene	74-86-2	≥ 98 %	Simple asphyxiant

*Contains no other components or impurities which influence the classification of the product.

4. FIRST AID MEASURES

Eye Contact	In case of splash contamination, immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are thoroughly flushed. Get medical attention if symptoms occur.
Inhalation	Remove victim to fresh air area wearing self-contained breathing apparatus. Keep victim warm and rested. Seek medical attention immediately. Apply artificial respiration if breathing stopped.
Skin Contact	None under normal use. Get medical attention if symptoms occur.
Ingestion	None under normal use. Get medical attention if symptoms occur.
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 concentration may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Water Foam Dry powder Use water spray or fog to control fire fumes
Unsuitable extinguishing media	Carbon dioxide
Special hazards arising from the chemical	Exposure to fire may cause containers to rupture/ explode, which may release asbestos. If involved in a fire the following toxic or corrosive fumes may be produced by thermal decomposition: Carbon Monoxide. Form explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper.
Special protective equipment and precautions for fire fighters	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. If possible stop the flow of product. Continue spray water from protected area until the container stays cool. Use Self-contained breathing apparatus while in confined space.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources. Post warning notices (including no smoking).
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.
Clean up methods	Provide adequate ventilation.

7. HANDLING AND STORAGE

Precaution for safe handling	Only properly trained or experienced persons should handle the gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. Nitrogen) before gas is introduced and when system is placed out of service. Protect cylinders from physical damage; do not drag, roll, slide or drop.
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Do not allow back feed into the container.
Contact your gas supplier if in doubt.

Condition for safe storage

Keep away from ignition sources (including static discharges).
Keep container below 50°C in a well-ventilated place.
Segregate from oxidant gases and other oxidants in store.
Keep cylinder stored upright.
If cylinder transported horizontally, stand it upright for minimum 1 hour. This is to allow the acetone to evenly re-distribute within the cylinder and prevent acetone being carried into the flame causing a 'flame thrower' effect.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters**

Exposure Limit – None established.
(Acetone, used as a solvent, has OSHA-PEL 500 ppm (1187mg/m³))

Appropriate engineering controls

Ensure adequate air ventilation.
Explosion proof ventilation systems.
Local exhaust ventilation to prevent accumulation of high concentration and maintain air-oxygen levels at or above 19.5%.
Gas detectors should be used when quantities of flammable gases may be released.
System under pressure should be regularly checked for leakage.
Always use a flashback arrestor on both the torch and cylinder ends of a hose.

Personal protection equipment

Wear goggles for eye protection.
Contact lens should not be worn when working.
Wear suitable hand, body and head protection.
Clothing impregnated with oxygen should be ventilated by walking in fresh open air for 15 minutes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless, gas
Odour	Distinctive, garlic-like odor.
Odour threshold	No information available
pH	Not applicable
Melting point / Freezing point	-80.8 °C
Boiling point	-84 °C
Flash point	-17.8 °C
Evaporation rate	Not applicable
Flammability	Flammable
Upper/lower explosive limit	LOWER: 2.4% UPPER: 88%
Vapour pressure	44 bar (20 °C)

Vapour density (Air =1)	1.172 kg/m ³ (at 0 °C & 1 atm)
Relative density	0.9
Solubility	1185 mg/l
Partition coefficient	Not available
Auto ignition temperature	305 °C at 1 atm
Decomposition temperature	Not available
Viscosity	9.36x10 ⁻⁵ Poise

10. STABILITY AND REACTIVITY

Reactivity	Form explosive acetylides with copper, silver and mercury. Do not use alloys containing more than 65% copper.
Chemical Stability	Unstable. Dissolved in a solvent supporter in a porous mass, stable as shipped.
Possibility of hazardous reactions	May react violently with oxidants, Can form potential explosive atmosphere in air.
Condition to avoid	Heat, flames and sparks. May decompose violently at high temperature and/ or pressure in the presence of a catalyst.
Incompatible materials	Oxidizing agents. Halogens. Copper. Halogenated compounds. Silver. Mercury. Brasses containing >66% copper and brazing materials containing silver or copper.
Hazardous decomposition products	Carbon monoxide (CO), Carbon dioxide (CO ₂) Hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity	Oral: LD ₅₀ > No information available. Dermal: LD ₅₀ > No information available. Inhalation: LC ₅₀ > No information available. Inhalation: High concentrations cause symptoms similar to that being intoxicated.
Skin corrosion / irritation	None.

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Serious eye damage/ irritation	None.
Respiratory or skin sensitisation	None.
Germ cell mutagenicity	None.
Carcinogenicity product	None.
Reproductive toxicity product	None.
Specific target organ toxicity – single exposure product.	None.
Specific target organ toxicity – repeated exposure product	None.
Aspiration hazard product	None.

12. ECOLOGICAL INFORMATION

Ecotoxicity effect	
Acute toxicity product	No ecological damage caused by this product
Additional ecological information	No ecological damage caused by this product
Persistence and degradability	Not applicable to gases and gas mixtures.
Bioaccumulative potential	Accumulation in organisms is not to be expected.
Mobility in soil	Unlikely to cause ground or water pollution due to its high volatility.
Other adverse effects	No other adverse effects are identified

13. DISPOSAL CONSIDERATIONS

Waste from residue / unused product	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 a place where its accumulation could be dangerous. Cylinders may contain asbestos. This is specialist disposal essential, return to SIG.
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Contaminated packaging

Do not reuse empty containers.
 Empty remaining contents.
 Dispose of container and unused contents in accordance
 with local and national regulation.
 Return cylinder to supplier

14. TRANSPORT INFORMATION

UN Number	UN 1072
UN proper shipping name	Acetylene, dissolved.
Transport hazard class(es)	2.1
Packing group	P200
Environmental hazards	None
Special precautions for user	None
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
Information	<p>Ensure the driver is understand well on the potential hazards of the load and knows what to do in the event of an accident or an emergency.</p> <p>Secured the product containers before transporting it.</p> <p>Ensure that the cylinder valve is closed and not leaking.</p> <p>Container valve guards or caps should be in place.</p> <p>Ensure adequate air ventilation.</p>

15. REGULATORY INFORMATION

Contact local government authority.

16. OTHER INFORMATION

Date of Preparation / Revision of SDS 2-October-2014 / Rev. 02

Legend to the abbreviations and acronyms used

Classification of the substance	Flam. Gas 1	: Flammable gases category 1
	Press. Gas	: Gases under pressure (Dissolved gas)
Hazard Statement	H 270	: May cause or intensify fire; oxidizer
	H 280	: Contains gas under pressure; may explode if heated.
Precautionary Statement	P210	: Keep away from heat/ sparks/ open flames/ hot surfaces – No smoking
	P377	: Leaking gas fire: Do not extinguish, unless leak can be stopped safely

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P381 : Eliminate all ignition sources if safe to do so.
P403 : Store in a well-ventilated place

Abbreviations

LC₅₀ : median lethal concentration
LD₅₀ : median lethal dose
PEL : Permissible exposure limits

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