

# SIG SOUTHERN INDUSTRIAL GAS SDN BHD


## SAFETY DATA SHEET

### ACETYLENE (DISSOLVED)

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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

<b>Precautionary Statement</b>	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.

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/m<sup>3</sup>) )

**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**

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

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

## 10. STABILITY AND REACTIVITY

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

## 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects

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

Revision Date: 22<sup>th</sup> September 2014

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

## 12. ECOLOGICAL INFORMATION

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

## 13. DISPOSAL CONSIDERATIONS

<b>Waste from residue / unused product</b>	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**

Not applicable

**Code****Information**

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.  
 Secured the product containers before transporting it.  
 Ensure that the cylinder valve is closed and not leaking.  
 Container valve guards or caps should be in place.  
 Ensure adequate air ventilation.

**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**

LC<sub>50</sub> : median lethal concentration  
LD<sub>50</sub> : median lethal dose  
PEL : Permissible exposure limits

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