

Rev 6 (02/2009)

1. Identification of the Substance/ Preparation and of the Company

Product Name: **Acetylene (Dissolved)**

Chemical Formula: C₂H₂

Company Identification: Energas Limited
Westmorland Street
Hull HU2 0HX

Emergency Telephone No: 01482 329333

Email: paul.rennison@energas.co.uk

2. Hazardous Properties

Dissolved gas.
Extremely flammable (F+).

3 Composition/ Information on Ingredients

Substance/ Preparation: Substance

Components/ Impurities: Contains no other components or impurities, which will influence the classification of the product.

CAS Number: 00074-86-2

EEC Number: 2008169 (from EINECS)

4. First Aid Measures

Inhalation:

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. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing has stopped. Phosphine is a common contaminant of acetylene produced from calcium carbide and water, and its presence should be considered if symptoms of irritation develop during acetylene inhalation.

Ingestion:

Ingestion is not considered a potential route of exposure.

5. Fire Fighting Measures

Suitable Extinguishing Media:

All known extinguishants can be used.

Specific Hazards:

Exposure to fire may cause containers to rupture/ explode.

Specific Methods:

If possible stop flow of product. Move container away or cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/ explosive re-ignition may occur. Extinguish any other fire.

Hazard Combustion Products:

Incomplete combustion may form carbon monoxide.

Special Protective Equipment for Fire Fighters:

In confined spaces use self-contained breathing apparatus.

6. Accidental Release Measures

Personal Precautions

Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources.

Environmental Precautions

Try to stop release.

Clean Up Methods

Ventilate area. complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction.

7. Handling and Storage

Ensure equipment is adequately earthed. Avoid contact with pure copper, mercury, silver and brass with greater than 70% copper. Suck back of water into container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact Energas Limited if in doubt. Keep away from ignition sources (including static discharges). Segregate from oxidant gases and other oxidant materials in store. Refer to supplier's container handling instructions. Keep container below 50°C in a well-ventilated place.

8. Exposure Controls/ Personal Protection

Personal Protection:

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Ensure adequate ventilation.
Wear suitable hand, body and head protection.
Wear goggles with suitable filter lenses when use is cutting/ welding.
Do not smoke while handling product.

9. Physical and Chemical Properties

Appearance/ Colour: Colourless gas.
Odour: Garlic like, poor warning properties at low concentrations

Molecular Weight: 26
Boiling Point: -75°C
Sublimation Point: -84°C
Triple Point (temp.): -80.6°C
Auto ignition temperature: 325°C
Critical Temperature: 35°C
Flammability Range: 2.4 – 83 % vol.
Relative Density (Gas): 0.9 (air = 1)
Solubility (mg/l Water): 1185 mg/l

10. Stability and Reactivity

Can form explosive mixtures in air.
May decompose violently at high temperatures and/ or high pressure or in the presence of a catalyst.
Forms explosive acetylides with copper, silver and mercury.
Do not use alloys containing more than 70% copper.
Dissolved in a solvent supported in a porous mass.
May react violently with oxidants.

11. Toxicological Information

No known toxicological effects from this substance.

12. Ecological Information

No known ecological effects from this substance.

13. Disposal Considerations

Do not discharge into areas where there is a risk of forming an explosive mixture with air.
Waste gas should be disposed of through a suitable burner with a flashback arrestor.
Do not discharge into any place where its accumulation could be dangerous.
Contact Energas Limited if guidance is required.

14. Transport Information

Proper Shipping Name : Acetylene, Dissolved
UN ID No. : 1001
Class/ Division : 2.1
Hazard Identification No. : 239

Labelling ADR : Label 2.1: Flammable gas.

Only transport on vehicles where the load space is 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 emergency.

Before transporting product containers check that they are firmly secured and ensure:

- Cylinder valve outlet is closed and not leaking.
- Valve outlet cap, nut or plug (where provided) is correctly fitted.
- Valve protection device (where provided) is correctly fitted).
- Adequate ventilation.
- Compliance with applicable regulations.

15. Regulatory Information

Number in Annexe 1 of Directive 67/548:
601-015-00-0.

EC Classification : R5; R6; F; R12;

- Symbols - road transport symbols are used and selected to the most stringent product classification.

EC or ADR - Label 2.1 : Flammable Gas.

Risk Phrases

RAs Asphyxiant in high concentration.
R12 Extremely flammable.

Safety Phrases

S9 Keep container in a well ventilated place.
S16 Keep away from sources of ignition – No smoking.
S36 Wear suitable protective clothing.

16. Other Information

Cylinder Identification:

Valve Connection: BS 341 No. 4
Cylinder Colour(s):

Either European Standard (EN1089-3)
Shoulder: Oxide Red (RAL 3009)
Body: Not defined in current regulations

Or Former Standard BS 349
Body: Maroon

Ensure all national/ local regulations are observed.
The hazard of asphyxiation is often overlooked and must be stressed during operator training.

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 correct at the time of going to press.



SAFETY DATA SHEET FOR ACETYLENE (DISSOLVED)

005

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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.

Refer to Energas Limited General Safety and Handling Data Sheet for further details.



SAFETY DATA SHEET FOR ACETYLENE (DISSOLVED)

005

Rev 6 (02/2009)

CYLINDER IDENTIFICATION
Ground Colour: Oxide Red (RAL 3009)

ENERGAS GENERAL SAFETY AND HANDLING DATA

1. GENERAL

Only trained persons should handle compressed gases.
Observe all regulations and local requirements regarding the storage of containers.
Do not remove or deface labels provided by the supplier for the identification of the container contents.
Ascertain the identity of the gas before using it.
Know and understand the properties and hazards associated with each gas before using it.
When doubt exists as to the correct handling procedure for a particular gas contact the supplier.

2 HANDLING AND USE

Wear stout gloves.
Never lift a container by the cap or guard unless the supplier states it is designed for that purpose.
Use a trolley or other suitable device or technique for transporting heavy containers, even for a short distance.
Where necessary wear suitable eye and face protection . The choice between safety glasses, chemical goggles, or full face shield will depend on the pressure and nature of the gas being used.

Where necessary for toxic gases see that self-contained positive pressure breathing apparatus or full face air line respirator is available in the vicinity of the working area.
Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with a lower pressure rating than that of the container.
Ascertain that all electrical systems in the area are suitable for service with each gas.

Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 45°C.
Never re-compress a gas mixture without consulting the supplier. Never attempt to transfer gases from one container to another.
Do not use containers as rollers or supports, or for any other purpose than to contain the gas as supplied.
Never permit oil, grease or other readily combustible substances to come into contact with valves of containers containing oxygen or other oxidants.

Keep container valve outlets clean and free from contaminants, particularly oil and water.
Do not subject containers to abnormal mechanical shocks which may cause damage to their valves or safety devices.

Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier.
Close the container valve whenever gas is not required even if the container is still connected to the equipment.

3 STORAGE

Containers should be stored in a well ventilated area. Some gases will require a purpose built area.
Store containers in a location free from fire risk and away from sources of heat and ignition. Designation as a no smoking area may be desirable.

Gas containers should be segregated in the storage area according to the various categories.

The storage area should be kept clear and access should be restricted to authorized persons only , the area should be clearly marked as a storage area and appropriate hazard warning signs displayed (Flammable Toxic etc.).
The amount of flammable or toxic gases should be kept to a minimum.
Flammable gases should be stored away from other combustible materials.

Containers held in storage should be periodically checked for general condition and leakage.
Containers in storage should be properly secured to prevent toppling or rolling .
Vertical storage is recommended where the container is designed for this.
Container valves should be tightly closed and where appropriate, valve outlets should be capped or plugged. Protect containers stored in the open against rusting and extremes of weather.
Containers should not be stored in conditions likely to encourage corrosion.
Store full and empty containers separately and arrange full containers so that the oldest stock is used first.

PRODUCTION SITE ADDRESSES

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FOR FURTHER INFORMATION CONTACT YOUR NEAREST DISTRIBUTION CENTRE