

Acetylene (dissolved)

PRODUCT : ACETYLENE (DISSOLVED) MSDS NR : 302-00-0001 BOC VERSION : 1.05 DATE : 02/04/08 PAGE : 1/2

1 IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY

Product name	Acetylene (dissolved)
Chemical formula	C ₂ H ₂
Company identification	see end of page 2
Emergency phone Nos	see end of page 2

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/ Preparation	Substance
Components/ Impurities	Contains no other components or impurities which will influence the classification of the product.
CAS Nr	74-86-2
EEC Nr (from EINECS)	200-816-9
Specification	98.5% minimum

3 HAZARDS IDENTIFICATION

Dissolved gas
Extremely flammable

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 stopped.

Ingestion

- Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards	Exposure to fire may cause containers to rupture/explode, which may release asbestos. Inform Fire Brigade
Hazardous combustion products	Incomplete combustion may form carbon monoxide.
Suitable extinguishing media	All known extinguishants can be used.
Specific methods	Where safe to do so quick action to close cylinder valve may help to extinguish fire in associated equipment. Follow actions as below in Acetylene leak — ignited.
Special protective equipment for fire fighters	In confined space use self-contained breathing apparatus.

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.
Clean up methods	Ventilate area.

Leak not ignited – cylinder NOT hot

- Check to make sure the cylinder is not getting hot (using the back of your bare hand).
- Check the valve is properly closed using moderate force (hand tight).
- DO NOT try to tighten the cylinder valve in the body of the cylinder or tamper with safety devices.

If the leak persists

- Extinguish all ignition sources
- Evacuate personnel from the area
- Ensure maximum ventilation by opening all doors and windows
- Take the cylinder outside to a well ventilated area
- Warn everyone in the area of a gas leak giving priority to those down wind
- Inform BOC

If the cylinder shows signs of heating

- DO NOT move the cylinder or open the valve
- Evacuate personnel to a safe location
- Call the fire brigade immediately
- Inform BOC

Leak ignited (cylinder not getting hot)

- Extinguish all ignition sources
- Extinguish the flame with a dry powder extinguisher or wet rag if safe to do so
- Wear leather gauntlets and keep hands clear of any fusible plugs
- Close the cylinder valve
- Check the cylinder with the back of your bare hand for signs of heating

Fire external to cylinder

- Evacuate the area (minimum 200 metres from the cylinder)
- Call the fire brigade
- Advise any neighbours within the 200 metres about the hazard
- Inform BOC

7 HANDLING AND STORAGE

Close cylinder valve when not in use to prevent contamination of the cylinder. Purge air from the system before introducing gas. Do not allow back feed into the container. Use only properly specified equipment, which is suitable for this product its supply pressure and temperature. Ensure safety equipment including flashback arrestor, non-return valve and cut off devices are fitted as appropriate prior to use. For full details refer to BCGA CP6 and CP7. Contact BOC if in doubt. Keep away from direct heat and ignition sources (including static discharges). Segregate from oxidant gases and other oxidants in store. Refer to BOC container handling instructions. Keep container below 50° C in a well-ventilated place. Acetylene cylinders should be stored upright. If a cylinder has been transported horizontally, stand it upright for a minimum of 1 hour prior to use. This will 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

Personal protection

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

9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	26
Melting point	-80.8°C
Boiling point	-84(s)°C
Critical temperature	35°C
Relative density, gas	0.9 (air=1)
Relative density, liquid	Not applicable
Vapour Pressure 20°C	44 bar
Solubility mg/l water	1185 mg/l
Appearance/Colour	Colourless gas
Odour	Garlic like
Other data	Poor warning properties at low concentrations.
Autoignition temperature	325°C.
Flammability range	2.4-88 vol% in air.

SAFETY DATA SHEET

10 STABILITY AND REACTIVITY

Stability and reactivity

Can form explosive mixture with air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst. Forms explosive acetylides with copper, silver and mercury.

Do not use alloys containing more than 65% copper or 43% silver. May react violently with oxidants.

11 TOXICOLOGICAL INFORMATION

General No known toxicological effects from this product.

12 ECOLOGICAL INFORMATION

General No known ecological damage caused by this product.

13 DISPOSAL CONSIDERATIONS

General

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 its accumulation could be dangerous. Cylinders may contain asbestos, specialist disposal essential, return to BOC. Contact BOC if guidance is required.

14 TRANSPORT INFORMATION

Proper Shipping

Name Acetylene, dissolved

UN Nr 1001

Class 2.1

ADR/RID

Classification Code 4F

ADR/RID Hazard Nr 239

Labelling ADR Label 2.1: flammable gas

Other transport information

Avoid transport on vehicles where the load space 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 ensure that they are firmly secured and:

- cylinder valve 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 Annex I 601-015-00-0.

of Dir 67/548

EC Classification R5|R6|F+;R12

- Symbols

F+: Extremely flammable

Labelling of cylinders

- Symbols

Label 2.1: flammable gas

- Risk phrases

R5 Heating may cause an 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 ignition sources - No smoking.

S33 Take precautionary measures against static discharges.

HSE Regulations for Acetylene

- For use at pressure over 1.5 bar

Consult the Explosive Branch of the Health and Safety Executive (HSE) if you wish to use acetylene at pressures exceeding 1.5 bar (g) [22lbs/in² (g)].

- At pressure between 0.62 bar and 1.5 bar

The requirements of the HSE Exemption Certificate 2/89 have to be met. Seek advice from BOC CES Department if you intend to use pipe, tubing or fittings greater than 13mm bore.

- Below 0.62 bar

Refer to British Compressed Gases Association Code of Practice CP6.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Always leak check cylinders when first collected, delivered or used using an approved leak detection fluid.

Dispose of cylinder(s) via gas suppliers only, porous material may contain asbestos.

Details given in this document are believed to be correct at the time of going to press. 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.

For further safety information please refer to "Safe Under Pressure" and "Acetylene FactSheet", both of which are available from BOC.

NOTES

1. Special control equipment is required for use with TF or TG MCPs and with manifolds of two banks of six or more individual cylinders. Consult BOC Customer Engineering Services Department for details.

2. The maximum rate of acetylene draw off is dependent upon ambient temperature and type of cylinder.

CYLINDER DIMENSIONS AND WEIGHTS

Cylinder Size	Approx. Dimensions incl. valve & guard where supplied (mm)	Approx. Gross Cylinder weight (kg)	Manifolded Cylinder Pallets (MCPs)	Approx. Dimensions including valve and guard where supplied (mm)	Approx. Gross Cylinder Weight (kg)
K	340 x 172	8	TF (12 x F)	1280 x 1500 x 850	1300
M	570 x 172	15	TG (12 x G)	1280 x 1500 x 850	1300
J	705 x 200	31	TN (12 x N)	1280 x 1500 x 850	1343
D	1050 x 210	59	ZH Quad* (12 x N)	1330 x 1090 x 2000	2610
H	1120 x 290	83	TNB Bundle** (12 x N)	1280 x 1650 x 830	1500
G	1200 x 264	97			
F	1200 x 264	96			
N	1200 x 264	97			

NOTE: Not all cylinders and MCP sizes of are available at all locations.

OUTLET CONNECTION: Cylinders: 5/8" BSP female left hand cone recessed. MCPs: 1" BSP male left hand with spigot recess and soft seal. * Offshore use only ** Restricted availability



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All BOC Safety Data Sheets are available online at www.boc.com/uk/sds

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