



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	
Trade name	ACETYLENE
Registration-No.	01-2119457406-36-
Chemical formula	C ₂ H ₂
1.2. Relevant identified uses of the substance or mixture and uses advised against	
Relevant identified uses	Industrial and professional. Perform risk assessment prior to use. Fuel gas for welding, cutting, heating, brazing and soldering applications. Test gas/Calibration gas. Laboratory use. Chemical reaction / Synthesis. Use as a fuel. Contact supplier for more information on uses.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture	
Hazard Class and Category Code Regulation CE 1272/2008 (CLP)	<ul style="list-style-type: none"> Physical hazards: <ul style="list-style-type: none"> Explosive with or without contact with air - (CLP : EUH006) Flammable gases - Category 1 - Danger - (CLP : Flam. Gas 1) - H220 Gases under pressure - Dissolved gas - Warning - (CLP : Press. Gas) - H280
2.2. Label elements - Labelling Regulation EC : 1272/2008 (CLP)	
Hazard pictograms	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>GHS04</p> </div> <div style="text-align: center;">  <p>GHS02</p> </div> </div>
Hazard statements	H220 : Extremely flammable gas. H280 : Contains gas under pressure; may explode if heated.
Precautionary statements	<ul style="list-style-type: none"> Prevention <ul style="list-style-type: none"> P210 : Keep away from heat/sparks/open flames/hot surfaces. – No smoking - Response <ul style="list-style-type: none"> P377 : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 : Eliminate all ignition sources if safe to do so. Storage <ul style="list-style-type: none"> P403 : Store in a well-ventilated place.
Other hazards	None.

SECTION 3: Composition/information on ingredients

3.1. Substance / Mixture	
Substance name	Acetylene (dissolved)
CAS N°	74-86-2
EC N°	200-816-9
Classification	F+; R12 R5 R6 Flam. Gas 1 (H220) Press. Gas Dissolved (H280) Expl. (EUH006)
Other information	<p>Contains no other components or impurities which will influence the classification of the product.</p> <p>For safety reasons, the acetylene is dissolved in acetone (Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) or dimethylformamide (Repr. 1B, Acute Tox. 4, Eye Irrit. 2) in the gas receptacle. Vapour of the solvent is carried away as impurity when the acetylene is extracted from the gas receptacle. The concentration of the solvent vapour in the gas is lower than the concentration limits to change the classification of the acetylene.</p> <p>The cylinder contains a porous material which in some cases contains asbestos fibres. The asbestos fibres are encapsulated in the solid porous material and are not released under normal conditions of use. See section 13 for the disposal of those cylinders.</p> <p>Full text of R-phrases see section 16. Full text of H-statements see section 16.</p>

SECTION 4: First aid measures

4.1. Description of first aid measures	
General information	<ul style="list-style-type: none"> Inhalation: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. Skin contact: Adverse effects not expected from this product. Eye contact: Adverse effects not expected from this product. Ingestion: Ingestion is not considered a potential route of exposure.
4.2. Most important symptoms and effects, both acute and delayed	
General information	In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
4.3. Indication of any immediate medical attention and special treatment needed	
General information	Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media	
Suitable extinguishing media	Water spray or fog. Dry powder.
Unsuitable extinguishing media	Do not use water jet to extinguish. Carbon dioxide.
5.2. Special hazards arising from the substance or mixture	
Specific hazards	<p>Exposure to fire may cause containers to rupture/explode.</p> <p>Incomplete combustion may form carbon monoxide.</p>

5.3. Advice for fire-fighters

Specific methods

Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.
If possible, stop flow of product.
Continue water spray from protected position until container stays cool.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Use water spray or fog to knock down fire fumes if possible.

Special protective equipment for fire fighters

In confined space use self-contained breathing apparatus.
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General information

1. Try to stop release.
2. Consider the risk of potentially explosive atmospheres.
3. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Evacuate area.
4. Ensure adequate air ventilation.
5. Eliminate ignition sources.

6.2. Environmental precautions

General information

Try to stop release.

6.3. Reference to other sections

General information

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product

Only experienced and properly instructed persons should handle gases under pressure.
The substance must be handled in accordance with good industrial hygiene and safety procedures.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Avoid contact with pure copper, mercury, silver and brass with greater than 65% copper.
Do not use alloys containing more than 43% silver.
Take precautionary measures against static discharge.
Purge air from system before introducing gas.
Keep away from ignition sources (including static discharges).
Do not smoke while handling product.
Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.
Consider the use of only non-sparking tools.
Ensure the complete gas system was (or is regularly) checked for leaks

before use.
 Solvent may accumulate in piping systems. For maintenance use appropriate resistant gloves (specify for DMF or acetone), goggles. Avoid suck back of water, acid and alkalis.
 Operating pressure in piping should be limited to 1.5 bar (gauge) or less due to more stringent national regulations (with maximum diameter DN25). Consider the use of flash back arrestors.
 For further information on safe use refer to EIGA code of practise acetylene (IGC Doc 123/04).
 Consider pressure relief device(s) in gas installations.
 Do not use alloys containing more than 43% silver.

Safe handling of the gas receptacle

Refer to supplier's container handling instructions.
 Do not allow backfeed into the container.
 Protect cylinders from physical damage; do not drag, roll, slide or drop.
 When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
 If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.
 Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier.
 Keep container valve outlets clean and free from contaminants particularly oil and water.
 Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
 Close container valve after each use and when empty, even if still connected to equipment.
 Never attempt to transfer gases from one cylinder/container to another.
 Never use direct flame or electrical heating devices to raise the pressure of a container.
 Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

7.2. Conditions for safe storage, including any incompatibilities

General information

- Keep container below 50°C in a well ventilated place.
- Segregate from flammable gases and other flammable materials in store.
- Containers should be stored in the vertical position and properly secured to prevent toppling. Stored containers should be periodically checked for general condition and leakage. Container valve guards or caps should be in place.
- Store containers in location free from fire risk and away from sources of heat and ignition. Containers should not be stored in conditions likely to encourage corrosion.
- Keep away from combustible materials.

7.3. Specific end use(s)

General information

None.

SECTION 8: Exposure controls/personal protection

8.1. Exposure controls

Appropriate engineering controls

Gas detectors should be used when flammable gases/vapours may be released. Consider work permit system e.g. for maintenance activities.
 Systems under pressure should be regularly checked for leakages.
 Provide adequate general and local exhaust ventilation.
 The substance is not classified for human health hazards or for environment effects and it is not PBT or vPvB so that no exposure assessment or risk characterisation is required. For tasks where the intervention of workers is required, the substance must be handled in accordance with good industrial hygiene and safety procedures.

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.

Individual protection measures, e.g. personal protective equipment

- Eye/face protection
 - Wear safety glasses with side shields. **Standard EN 166 - Personal eye-protection.**
- Skin protection
 - Hand protection: Wear working gloves when handling gas containers. **Standard EN 388 - Protective gloves** against mechanical risk.
 - Others: Wear safety shoes while handling containers. **Standard EN ISO 20345 - Personal protective equipment** - Safety footwear.
- Thermal hazards : None necessary.
- Environmental exposure controls: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information

- Appearance: Gas.
- Physical state at 20°C / 101.3kPa: Gas.
- Colour: Colourless.
- Odour : Garlic like. Poor warning properties at low concentrations.
- Odour threshold: Odour threshold is subjective and inadequate to warn for overexposure.
- pH value: Not applicable.
- Molar mass [g/mol]: 26
- Melting point / Freezing point: 11,1 / Melting point [°C]: -80,8
- Boiling point [°C]: -84(s)
- Critical temperature [°C]: 35
- Flash point [°C]: Not applicable for gases and gas-mixtures.
- Evaporation rate (ether=1): Not applicable for gases and gas-mixtures.
- Flammability range [vol% in air]: 2,3 - 100.
- Vapour pressure [20°C]: 44bar
- Relative density, gas (air=1): 0,9
- Relative density, liquid (water=1): Not applicable.
- Solubility in water [mg/l]: 1185
- Partition coefficient n-octanol/water [log Kow]: 0,37
- Other data: None.

SECTION 10: Stability and reactivity

10.1. Reactivity

General information

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

General information Dissolved in a solvent supported in a porous mass.
Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

General information May react violently with oxidants.
Can form explosive mixture with air.
May decompose violently at high temperature and/or pressure or in the presence of a catalyst. May react explosively even in the absence of air.

10.4. Conditions to avoid

General information Keep away from heat/sparks/open flames/hot surfaces. – No smoking. High temperature.
High pressure.

10.5. Incompatible materials

General information Air, Oxidiser.
Forms explosive acetylides with copper, silver and mercury.
Do not use alloys containing more than 65% copper.
Do not use alloys containing more than 43% silver.
For additional information on compatibility refer to ISO 11114.

10.6. Hazardous decomposition products

General information Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicity No known toxicological effects from this product.

SECTION 12: Ecological information

12.1. Toxicity

General information No ecological damage caused by this product.

12.2. Results of PBT and vPvB assessment

General information Not classified as PBT or vPvB.

SECTION 13: Disposal considerations

13.1. Waste treatment methods


General information

- Avoid discharge to atmosphere.
- 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.
- Refer to the EIGA code of practice Doc.30 “Disposal of Gases”, downloadable at <http://www.eiga.org> for more guidance on suitable

disposal methods.

- Ensure that the emission levels from local regulations or operating permits are not exceeded.

SECTION 14: Transport information

14.1. Transport information	
ONU number	1001
Transport hazard class(es)	 2.1 : Flammable gases
Environmental hazards	None.
14.2. Special precautions for user	
General information	<ul style="list-style-type: none"> • 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 there is adequate ventilation. • Ensure that containers are firmly secured. • Ensure cylinder valve is closed and not leaking. • Ensure valve outlet cap nut or plug (where provided) is correctly fitted. • Ensure valve protection device (where provided) is correctly fitted.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture	
Chemical safety assessment	A CSA does not need to be carried out for this product.

SECTION 16: Other information

Indication of changes	Revised safety data sheet in accordance with commission regulation (EU) No 453/2010.
Training advice	Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training.
Labelling EC 67/548 or EC 1999/45	 F+ : Extremely flammable R Phrase(s): R5 : Heating may cause an explosion. R6 : Explosive with or without contact with air. R12 : Extremely flammable.

	<p>S Phrase(s):</p> <ul style="list-style-type: none">S2 : Keep out of the reach of children.S9 : Keep container in a well-ventilated place.S16 : Keep away from sources of ignition - No smoking.S33 : Take precautionary measures against static discharges.
Information source	<p>This Safety Data Sheet has been established in accordance with the applicable European Union legislation.</p>
Other Advice	<p>Details given in this document are believed to be correct at the time of going to press.</p> <p>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.</p> <p>Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.</p>
Responsibilities	<p>The base of available information at the time of going to press and cover the most common applications, without guaranteeing that its content is sufficient in all cases and situations.</p> <p>Its observance does not exclude the fulfillment of the in force regulation in every moment.</p>
Description of changes	<p>Adjustment to current regulations.</p>