

Acetylene (dissolved)**00001_DIS**

2.1 : flammable gas.

Danger**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name : Acetylene (dissolved)
SDS Nr : 00001_DIS
Chemical description : Acetylene (dissolved)
CAS No :000074-86-2
EC No :200-816-9
Index No :601-015-00-0
Registration-No. : Registration deadline not expired.
Chemical formula : C₂H₂

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.
Test gas / Calibration gas. Fuel gas for welding, cutting, heating, brazing and soldering applications. Laboratory use Chemical reaction / Synthesis.
Contact supplier for more uses information
Consumer uses : Fuel gas for welding, cutting, heating, brazing and soldering applications.

1.3. Details of the supplier of the safety data sheet

Company identification : Società Italiana Acetilene e Derivati S.p.A.
SIAD S.p.A.
via San Bernardino, 92
I-24126 Bergamo (BG) Italy
Tel. : +39 035 328 111
E-Mail address (competent person) : siad_reach_clp@siad.com

1.4. Emergency telephone number

Emergency telephone number : Tel. : 118 / +39 035 328 111

SECTION 2. Hazards identification**2.1. Classification of the substance or mixture****Hazard Class and Category Code Regulation EC 1272/2008 (CLP)**

• Physical hazards : Flammable gases - Category 1 - Danger - (CLP : Flam. Gas 1) - H220
Gases under pressure - Dissolved gas - Warning - (CLP : Press. Gas) - H280
Explosive with or without contact with air - (CLP : EUH006)

2.2. Label elements**Labelling Regulation EC 1272/2008 (CLP)**

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SECTION 2. Hazards identification (continued)

• Hazard pictograms



- Hazard pictograms code : GHS02 - GHS04
- Signal word : Danger
- Hazard statements : H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.
- Supplemental hazard information : EUH006 - Explosive with or without contact with air.
- Precautionary statements
 - Prevention : P210 - Keep away from heat, sparks, open flames or hot surfaces. – No smoking.
 - Response : P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
 - Storage : P403 - Store in a well-ventilated place.

2.3. Other hazards

: None.

SECTION 3. Composition/information on ingredients

3.1. Substance / 3.2. Mixture

Substance.

Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Acetylene (dissolved)	: 100 %	74-86-2	200-816-9	601-015-00-0	*2	F+; R12 R5 R6 Flam. Gas 1 (H220) Press. Gas (H280) Expl. (EUH006)

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

For safety reasons, the acetylene is dissolved in acetone or dimethylformamide 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.

* 1: Listed in Annex IV / V REACH, exempted from registration.

* 2: Registration deadline not expired.

* 3: Registration not required: Substance manufactured or imported < 1t/y Full text of H-statements see chapter 16

SECTION 4. First aid measures

4.1. Description of first aid measures

- 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

- : 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.

4.3. Indication of any immediate medical attention and special treatment needed

- : Obtain medical assistance.



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SECTION 5. Fire-fighting measures

5.1. Extinguishing media

Extinguishing media

- Suitable extinguishing media : Water.
Dry powder.
Foam.
- Unsuitable extinguishing media : Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- Specific hazards : Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products : Incomplete combustion may form carbon monoxide.

5.3. Advice for fire-fighters

- Specific methods : Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains. 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.
- Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.2. Environmental precautions

- : Try to stop release.

6.3. Methods and material for containment and cleaning up

- : Ventilate area.

6.4. Reference to other sections

- : 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 product 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 atmosphere and the need for explosion-proof equipment.
Consider the use 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



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SECTION 7. Handling and storage (continued)

Safe handling of the gas receptacle

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).

: 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

: Keep container below 50°C in a well ventilated place.
Segregate from oxidant gases and other oxidants 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. Keep away from combustible materials. All electrical equipment in the storage areas should be compatible with the risk of potentially explosive atmosphere.
Observe all regulations and local requirements regarding storage of containers.
Containers should not be stored in conditions likely to encourage corrosion.

7.3. Specific end use(s)

: None.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

DNEL: Derived no effect level : 2500 ppm - 2675 mg/m³
PNEC: Predicted no effect concentration : None available. Substance is a gas and is extremely unlikely to reside in the aquatic compartment

8.2. Exposure controls

8.2.1. 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.

8.2.2. Individual protection measures, e.g. personal protective equipment : 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.
Consider the use of flame resistant anti-static safety clothing.
Wear leather safety gloves and safety shoes when handling cylinders.
Wear safety glasses with side shields
Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding.



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SECTION 8. Exposure controls/personal protection (continued)

8.2.3. 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

Appearance

- 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 to 100
- Vapour pressure [20°C] : 44 bar
- 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 : 0.37
- Auto-ignition temperature [°C] : 305
- Decomposition point [°C] : 635
- Viscosity at 20°C [mPa.s] : 0.011

9.2. Other information

Other information : None.

SECTION 10. Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

: 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

: 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

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

10.5. Incompatible materials

: Air, Oxidiser.
Forms explosive acetylides with copper, silver and mercury.
Do not use alloys containing more than 65% copper.

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SECTION 10. Stability and reactivity (continued)

Do not use alloys containing more than 43% silver.
For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

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

SECTION 11. Toxicological information

11.1. Information on toxicological effects

- Acute toxicity** : Acetylene has low inhalation toxicity, the LOAEC for mild intoxication in humans with no residual effects is 100.000ppm(107,000 mg/m3).
There are no data on oral and dermal toxicity (studies are not technically feasible as the substance is a gas at room temperature.
Classification criteria are not met.
- Skin corrosion/irritation** : No known effects from this product.
- Serious eye damage/irritation** : No known effects from this product.
- Respiratory or skin sensitisation** : No known effects from this product.
- Carcinogenicity** : No known effects from this product.
- Germ cell mutagenicity** : No known effects from this product.
- Reproductive toxicity** : No known effects from this product.
- STOT-single exposure** : No known effects from this product.
- STOT-repeated exposure** : No known effects from this product.
- Aspiration hazard** : Not applicable for gases and gas-mixtures.

SECTION 12. Ecological information

12.1. Toxicity

: No known ecological damage caused by this product.

12.2. Persistence - degradability

: Will rapidly degrade by indirect photolysis in air. Not readily biodegradable. Will not undergo hydrolysis.

12.3. Bioaccumulative potential

: Not expected to bioaccumulate due to the low log Kow.

12.4. Mobility in soil

: Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Results of PBT and vPvB assessment

: Not classified as PBT or vPvB.

12.6. Other adverse effects

- Effect on ozone layer** : No known effects from this product.
- Effect on the global warming** : No known effects from this product.



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SECTION 13. Disposal considerations

13.1. Waste treatment methods

: 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 code of practice of EIGA (Doc. 30/10 "Disposal of Gases, downloadable at <http://www.eiga.org>) for more guidance on suitable disposal methods

13.2. Additional information

: Dispose of cylinder via gas supplier only; Cylinder contains a porous material which in some cases contains asbestos.

SECTION 14. Transport information

UN number : 1001
Labelling ADR, IMDG, IATA

: 2.1 : flammable gas.

Land transport (ADR/RID)

H.I. nr : 239
UN proper shipping name : ACETYLENE, DISSOLVED
Transport hazard class(es) : 2
Classification code : 4 F
Packing Instruction(s) : P200
Tunnel Restriction : B/D Tank carriage: Passage forbidden through tunnels of category B, C, D
Environmental hazards : None.

Sea transport (IMDG)

Proper shipping name : ACETYLENE, DISSOLVED
Class : 2.1
Emergency Schedule (EmS) - Fire : F-D
Emergency Schedule (EmS) - Spillage : S-U

Air transport (ICAO-TI / IATA-DGR)

Proper shipping name (IATA) : ACETYLENE, DISSOLVED
Class : 2.1
Passenger and Cargo Aircraft : DO NOT LOAD IN PASSENGER AIRCRAFT.
Cargo Aircraft only : Allowed.
Packing instruction - Cargo Aircraft only : 200

Special precautions for user

: 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 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.
- Ensure there is adequate ventilation.

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SECTION 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Restrictions on use : None.

Seveso directive 96/82/EC : Listed

National legislation

: Ensure all national/local regulations are observed.

15.2. Chemical Safety Assessment

: A Chemical safety assessment (CSA) has been carried out for this product.
Refer to section 8.2.

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.**List of full text of H-statements in section 3.** : EUH006 - Explosive with or without contact with air.
H220 - Extremely flammable gas.
H280 - Contains gas under pressure; may explode if heated.**Note** : This Safety Data Sheet has been established in accordance with the applicable European Union legislation.**DISCLAIMER OF LIABILITY** : 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 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.**End of document**