**SAFETY DATA SHEET**

**Prepared in accordance with Annex II of Regulation REACH / EU / 1907/2006, Regulation /EC/ 1272/2008 and Regulation /EC/ 453/2010**.

**Manufacturer**: CALCIT JSC
Asenovgrad
VAT: 115005545

**Date**: 10.11.2010
**Edition**: 2/2010.
**Pages**: 7

**ACETYLENE**

## 1. Identification of the substance / preparation and company

### 1.1 Name of the substance / preparation

Name of substance / preparation: ACETYLENE
Chemical formula: C2H2
Trade name: Acetylene
CAS №: 74-86-2
EINECS N °: 200-816-9
INDEX №: 601-015-00-0
Molecular weight: 26
Number of pre-registration pursuant to Article 20 (1) of REACH: 05-2114607554-51-0000

### 1.2. Use of the substance / preparation

For welding, cutting, heating, soldering, use as solder
Application of metallic coatings with gun
For lubrication of molds for the production of glass bottles
For carbonizing of steel under low-pressure
Gas fuel of the flame in atomic absorption analyzers.
Production of electronic components
Use as a single gas or in mixtures for calibration of equipment for analysis.
As raw material in chemical processes.

### 1.3. Name and address of manufacturer / importer

Name: CALCIT JSC
Address: 4230 Asenovgrad
INDUSTRIAL ZONE "NORTH"
Phone: 033162723, 033163300
Fax: 033167426
E-mail: office@calcit-bg.com
Web address: www.calcit-bg.com

### 1.4. Phones in case of emergency

European emergency number: 112
Emergency phone at the company outside working hours: 033165114

## 2. Hazard identification

Classification and Labelling

### 2.1 Classification and Labelling under Regulation 67/548 / EEC

Classification

#### 2.1.1 Indication of danger:

Acetylene is classified as a dangerous substance under Directive 67/548/EEC
F + Extremely flammable

#### 2.1.2 Human health:

**Risk Phrases**:
R 5 - can cause an explosion when heated.
R 6 - Explosive with or without the presence of air
R 12 - Extremely flammable.
**Warning phrases**:
S 1 / 2 - Keep locked away from children
S 9 - Keep container in a well ventilated place.
S 16 - Keep away from sources of ignition. Do not smoke.
S 33 - Take precautions against static electricity
**Warning phrases**:
Flammable gas under pressure. Can form explosive mixtures with air. May cause dizziness and drowsiness. Solo breathing apparatus is required to rescue the workers. By normal temperature and pressure the acetylene is a colorless gas with a smell of garlic. By inhalation causes suffocation due to oxygen deficiency. Higher concentrations can cause headaches, drowsiness, dizziness, agitation, salivation, vomiting. In case of contact with eyes, rinse immediately the eyes with running water for at least 15 minutes.
By repeated / prolonged / burn:
Welding and cutting with acetylene may cause additional health risks. Vapours and gases can cause serious lung diseases. Keep your head out of the vapours. Use ventilation, local exhaust, or both, to keep the vapours and gases away from the area of inhalation and the main room.
**Labelling**
Indication of danger:
F + - Extremely flammable
**Risk Phrases**:
R 5 - can cause an explosion when heated.
R 6 - Explosive with or without the presence of air
R 12 - Extremely flammable.
**Warning phrases**:
S 1 / 2 - Keep locked away from children
S 9 - Keep container in a well ventilated place.
S 16 - Keep away from sources of ignition. Do not smoke.
S 33 - Take precautions against static electricity
**2.2 Classification and Labelling under GHS - Regulation CLP 1272/2008**
**Classification**:
Hazard Identification:
Extremely flammable gas. Hazard category 1
Contains gas under pressure. May explode when heated. Dissolved gas
**Labelling**:
Signal word: Danger
Hazard pictograms:
GHS02: Flame
GHS04: Gas bottle
**Hazard**:
H 220 - Extremely flammable gas
N280 - Contains gas under pressure may explode when heated

**Safety precautions**:
P 377 - Fire of expired gas: do not extinguish, unless the possibility of safely leak
P 210 - Keep away from heat / sparks / open flames / hot surfaces ... Smoking prohibited.
P 381 - Eliminate all ignition sources if safe.
P 410 + P 403 - Keep away from direct sunlight. Store in a well ventilated place.
Additional labeling requirements:
Additional hazard under Regulation CLP 1272/2008:
EUH006 - Explosive with or without contact with air.

## 3. Composition

### 3.1. General characteristics of chemicals and their percentage.

Acetylene - C2 H2 - 100%. Name and number of the substance on EINECS or ELINCS: Acetylene, CAS №: 74-86-2, EINECS N °: 200-816-9, INDEX №: 601-015-00-0.
Contains no other components or impurities which affect the classification of the product.

## 4. Arrangements for first aid

### 4.1. Eye contact

Check for contact lenses and remove if any. In case of contact immediately wash eyes with running water for at least 15 minutes. Can be used cold water. Immediately call a doctor.

### 4.2. Inhalation

If you breathed, move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, pick up oxygen. Immediately get medical help.

### 4.3 Ingestion

Unlikely route of exposure.

### 4.4. Skin contact

In case of contact, wash immediately with running water. Remove soaked clothing and shoes. Can be used cold water. Wash clothing before using them again. Clear shoes very well before using them. Get medical attention.

## 5. Measures for fire-fighters

### 5.1 Flammability

F + Extremely flammable gas!

### 5.2. Suitable for fire fighting

Use the resources available for fire fighting.
Tell Service fire safety and protection of the population.

### 5.3. Specific hazards associated with exposure of the substance / preparation and combustion products.

These products are carbon monoxide (CO) and carbon dioxide (CO2). Evacuate the whole staff, vacant from fire fighting.

### 5.4 Special protective equipment for firefighters

Special high temperature resistant clothing, gloves, boots, breathing apparatus.

### 5.5 Additional information

Exposure to fire may cause explosion of the bottles. Remove yourself from bottles and rinse with cold water from a protected position until the bottles cool.

## 6. Accidental release measures

### 6.1. Personal precautions

**In case of leakage** - immediately evacuate all staff from danger area. If necessary, use a respirator. Try to stop the leakage. Remove possible sources of ignition.
Provide ventilation in the room / place.
**WARNING! Flammable gas under high pressure.** Forms explosive mixtures with air.

### 6.2. Measures for environmental protection

Do not allow waste from bottles to pollute the surrounding environment. Keep personnel

away. Dispose of products, residues or containers properly, according to state and local laws and regulations. If necessary, contact your provider for help.

**6.3. Cleaning agents**

Ensure adequate ventilation.

**7. Handling and storage**

**7.1. Handling**

Protect cylinders from damage. Use a suitable handcart or trucks to move the bottles - no drag, no roll, no skating, do not knock the bottles. The whole system for acetylene and associated equipment must be earthed. Electrical equipment should not initiate electrical sparks or may not be secure. Check for leaks with soapy water, never use a flame. Never use copper pipes for use with acetylene, use steel or wrought iron. Open the acetylene valve on the bottle so that there is a minimum leakage of gas, which would allow to close the valve quickly in an emergency. Do not open the valve more than 1.5 turns. Never use acetylene pressure greater than 103.5 kPa. Acetylene cylinders are heavier than other bottles because they contain a porous material and acetone. Never lift cylinders without safety caps - cap is intended only to protect the valve. Never place objects within the cap (wrench, screwdriver, etc.) - this can cause damage to the valve and a gas leak. Open valve slowly. If the valve opens difficult, stop and call your provider.

Acetylene cylinders are filled with porous material containing acetone, in which acetylene is dissolved. Use personal protective equipment - special clothing, shoes (shock resistant) gloves. If the cylinders were in a horizontal position, place them in a vertical position and wait half an hour before you begin working with them.

**7.2. Storage**

Store in a dry and well ventilated places or places with natural ventilation. Keep acetylene away from oxygen, chlorine and other oxidizing gases and oxidizing agents, sources of fire, heat, combustible materials and substances at a distance of at least 6.1 meters or use a barrier of nonflammable material. This barrier must be at least 1.53 meters tall and must be resistant to fire (fire) at least half an hour. Protect cylinders from falling and hitting.

Place the plates “No smoking and lighting a fire” in warehouse and office accommodation. All electrical equipment in storeroom should be safe. The storage rooms must comply with established rules for Class 1 dangerous area. Store at temperatures not higher than $52^{0}$ C. Keep full and empty cylinders separately. Protect cylinders from direct solar heating.

**7.3 Other hazards of handling, storage and use of acetylene**.

Flammable gas under high pressure. Place the bottles upright to avoid any leakage of solvent. Can form explosive mixtures with air. Ground equipment. The gas can cause suffocation in the oxygen deficiency. Close the cylinder valve after each use; keep the valve closed even by empty bottle. When returning cylinder to supplier, make sure valves are closed. If there is a leak close the valve of the bottle. Avoid contact with pure copper, mercury, silver and brass with a copper content above 70%.

**8. Exposure controls and personal protective equipment**

**8.1. Exposure limits**

No data for limit concentrations by the classification of acetylene

**8.2. Control of exposure**

Keep away from oxidizing gases and other oxidants from sources of fire, heat, combustible materials and substances and from direct solar heating. Provide reliable ventilation in indoor storage. No smoking.

**8.2.1. Control of occupational exposure**

To provide natural and / or mechanical ventilation.

Providing personal protective equipment - special clothing, gloves, protective glasses.

**8.2.1.1. Respiratory Protection**

At high concentrations can cause suffocation, which may lead to unconsciousness. In low concentrations may have narcotic effects. Symptoms may include dizziness, headache, nausea and loss of coordination. Give oxygen if breathing is difficult. If breathing has stopped, give artificial respiration. Seek medical attention.

**8.2.1.2. Hand Protection**

We recommend wearing gloves when welding. Have CE-marking.

**8.2.1.3. Eye Protection**

Wear tightly fitting goggles.

**8.2.1.4. Protect Skin**

Wear leather work shoes with metal foil and toe-cap, antistatic. Wear protective clothing where necessary.

**8.2.2. Control of exposure to environment**

No data.

**9. Physical and chemical properties**

| | |
|---|---|
| Physical state | Gas |
| Odour | Acetylene with 100% purity is odorless, but commercial acetylene has a specific smell of garlic. |
| Color | Colorless |
| pH | Not applicable. |
| Boiling Point | -75,2 ° C (-103,4 F) 6170 kPa |
| Freezing Point | - 82,2 ° C (-116 F) 6170 kPa |
| Flash point | 325 ° C |
| Limits flash | 2.4-88 vol% in air |
| Density (air = 1) | 0.906 g / ml |
| Water solubility, mg / l | Not applicable |
| Vapour density | 0.00117 g / ml |
| Vapour pressure | 44 bar (20 ° C) |
| Evaporation speed | Not applicable |
| Partition coefficient | Not applicable |

Acetylene is a little bit lighter than air.

In air environment acetylene burns with high smoked flame. Burning in oxygen environment is a white flame in which develops high temperature / over 2700 ° C. Such property is used in acetylene torches for cutting and welding metals.

**10. Stability and reactivity**

The product is stable under the conditions of storage.

**10.1. Conditions to Avoid**

High temperatures and pressures.

Contact with pure copper, mercury, silver and brass with a copper content above 70%. Oxidizing gases and other oxidants, sources of fire, heat, combustible materials and substances. Fire or explosion can occur at high temperatures, pressures, or use of incompatible materials.

**10.2. Materials to avoid**

Pure copper, mercury, silver and brass with copper content exceeding 70%, oxidizing agents, acids, halogens, moisture.

**10.3. Hazardous decomposition products**

In thermal decomposition or burning, welding and cutting forms carbon monoxide / carbon dioxide.

**11. Toxicological information**

No known toxicological effects from this product. In the process of welding can produce dangerous gases and vapours.

**12. Ecological Information**

**12.1 Ecotoxicity**

**12.1.1. Acute / prolonged toxicity to fish**

None.

**12.1.2. Acute / prolonged toxicity to invertebrates**

No

**12.1.3. Acute / prolonged toxicity to aquatic plants**

No

**12.1.4 Toxicity to microorganisms and bacteria**

No

**12.1.5 Chronic toxicity to aquatic organisms**

No

**12.1.6 Toxicity to soil organisms**

No

**12.1.7 Toxicity to terrestrial plants**

No

**12.2 Persistence and degradation**

Not applicable to inorganic substances.

**12.3 Bioaccumulation potential**

The product does not show any bioaccumulation properties.

**13. Disposal**

Do not try to miss the remaining or unused. Turn the bottle to their supplier.

**14. Transport information**

Acetylene is transported in steel cylinders under pressure. Cylinders must be securely fastened (on pallets), with protective caps, must be transported upright and in a well ventilated vehicle.

**Name in transportation.**

Acetylene
ADR Class: 2
H.I. nr. : 239
ADR / RID Classification code: 4 F
Hazard Class: Class 2.1 - Flammable gas.
Identification number: UN 1001
Index number.
601-015-00-0
Plate during transport.
Flammable gas

**15. Information Regulatory**

Material Safety Data Sheet is prepared in connection with requirements of REACH Regulation, Regulation on the method of classification, packaging and labeling of chemicals (amended. No.51 of 3.06.2008, become effective 1.06.2008) and the Law for protection from harmful effects of chemicals (10 04.02.2000)

**15.1 Labelling according to EU Regulation 1272 / 2008 / See Section 2 /**

**15.2 Restrictions on sales and use**

None.

**15.3 National legislation**

None.

**15.4 Assessment of safety of this substance has been m**ade.

## 16. Other information

### 16.1 Hazard warnings:

H 220 - Extremely flammable gas
H 280 - Contains gas under pressure, may explode when heated

### 16.2 Safety precautions:

P 377 - Fire of expired gas: do not extinguish, unless the possibility of safely leak
P 210 - Keep away from heat / sparks / open flames / hot surfaces ... Smoking prohibited.
P 381 - Eliminate all ignition sources if safe.
P 410 + P 403 - Keep away from direct sunlight. Store in a well ventilated place.

### 16.3 Risk Phrases

R 5 - may cause an explosion when heated.
R 6 - Explosive with or without the presence of air
R 12 - Extremely flammable.

### 16.4 Warning phrases

S 9 - Keep container in a well ventilated place.
S 16 - Keep away from sources of ignition. Do not smoke.
S 33 - Take precautions against static electricity.

### 16.5 Additional information

This safety data sheet complements the technical instructions of use, without replacing them. The information contained in it is based on our knowledge of the product around that date. It does not relieve the customer from compliance with legal provisions relating to its activities. Responsibility of the customer is to consider all necessary precautions when using the product.
This document is intended only for instruction for proper and safe handling of employees and customers with appropriate training. Persons receiving this information should make an independent appraisal to determine its fitness for a particular purpose.

### 16.6 References

MSDS is prepared in accordance with:
Regulation REACH / EU / 1907/2006.
Regulation 453/2010
Regulation 1272/2008
Directive 67/548 EEC

This version is an updated version to be in accordance with Annex II of Regulation REACH / EU / 1907/2006.

Version November 2010