

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

## Acetylene (dissolved)

Date of issue: 17/05/2015

Supersedes: 17/05/2015

Revision date: 18/01/2017

Version: 3.0

SDS reference: LAT-C2H2-001

**Danger**



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

#### 1.1. Product identifier

Trade name : Acetylene (dissolved)  
 SDS no : LAT-C2H2-001  
 Chemical description : Acetylene (dissolved)  
 CAS No : 74-86-2  
 EC No : 200-816-9  
 EC Index No : 601-015-00-0  
 Registration-No. : 01-2119457406-36  
 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  
 Laboratory use  
 Chemical reaction / Synthesis  
 Use as a fuel  
 Fuel gas for welding, cutting, heating, brazing and soldering applications  
 Contact supplier for more information on uses

#### 1.3. Details of the supplier of the safety data sheet

Company identification : Elme Messer L  
 Katlakalna iela 9  
 LV-1073 Rīga Latvija  
 00371 67355445  
 www.elmemesser.lv  
 eml@eml.lv

#### 1.4. Emergency telephone number

Emergency telephone number : 112 (24h) Elme Messer L +371 67355445

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards	Flam. Gas	H220
	1	
	Chem.	H230
	Unst. Gas	
	A	
	Press.	H280
	Gas	
	(Diss.)	

Full text of H-statements see section 16.

#### 2.2. Label elements

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

H220 - Extremely flammable gas  
 H280 - Contains gas under pressure; may explode if heated  
 H230 - May react explosively even in the absence of air.

Precautionary statements (CLP)

- Prevention : P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. 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. Substances**

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Acetylene (dissolved)	(CAS No) 74-86-2 (EC No) 200-816-9 (EC Index No) 601-015-00-0 (Registration-No.) 01-2119457406-36	100	Flam. Gas 1, H220 Chem. Unst. Gas A, H230 Press. Gas (Diss.), H280

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  
 Dimethylformamide is on the Candidate List of Substances of Very High Concern (SVHC) that might be subject to authorization for future placing on the market and uses  
 For safety reasons, the acetylene is dissolved in acetone (Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) or dimethylformamide (Flam.Liq.3, 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  
*Contains no other components or impurities which will influence the classification of the product.*  
 Full text of H-statements see section 16.

**3.2. Mixtures**

: Not applicable

**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

**SECTION 5: Fire-fighting 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 : Exposure to fire may cause containers to rupture/explode
- Hazardous combustion products : Incomplete combustion may form carbon monoxide

**5.3. Advice for firefighters**

- 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  
Use water spray or fog to knock down fire fumes if possible  
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire  
Continue water spray from protected position until container stays cool  
Move containers away from the fire area if this can be done without risk
- Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus  
Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters  
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask  
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**

- : Try to stop release  
Evacuate area  
Consider the risk of potentially explosive atmospheres  
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe  
Eliminate ignition sources  
Ensure adequate air ventilation  
Act in accordance with local emergency plan  
Stay upwind

**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

- : The product must be handled in accordance with good industrial hygiene and safety procedures
- Only experienced and properly instructed persons should handle gases under pressure
- Consider pressure relief device(s) in gas installations
- Ensure the complete gas system was (or is regularly) checked for leaks before use
- Do not smoke while handling product
- Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt
- Avoid suck back of water, acid and alkalis
- Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment
- Purge air from system before introducing gas
- Take precautionary measures against static discharge
- Keep away from ignition sources (including static discharges)
- Consider the use of only non-sparking tools
- Avoid contact with pure copper, mercury, silver and brass with greater than 65% copper
- Do not use alloys containing more than 43% silver
- 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
- Solvent may accumulate in piping systems. For maintenance activities use appropriate resistant gloves, assess the necessity to use a respiratory filter device (specify gloves and filters for DMF or acetone use) and wear safety goggles. Avoid breathing the vapour of the solvent. Provide adequate ventilation
- For further information on safe use refer to EIGA code of practice acetylene (EIGA Doc 123)
- Do not breathe gas
- Avoid release of product into atmosphere.

## 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**

- : Observe all regulations and local requirements regarding storage of containers
- Containers should not be stored in conditions likely to encourage corrosion
- Container valve guards or caps should be in place
- Containers should be stored in the vertical position and properly secured to prevent them from falling over
- Stored containers should be periodically checked for general condition and leakage
- Keep container below 50°C in a well ventilated place
- Store containers in location free from fire risk and away from sources of heat and ignition
- Keep away from combustible materials
- Segregate from oxidant gases and other oxidants in store
- All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.

**7.3. Specific end use(s)**

- : None.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

OEL (Occupational Exposure Limits) : No data available.

<b>Acetylene (dissolved) (74-86-2)</b>	
DNEL: Derived no effect level (Workers)	
Acute - systemic effects, inhalation	2675 mg/m <sup>3</sup> 2500 ppm
Long-term - systemic effects, inhalation	2675 mg/m <sup>3</sup> 2500 ppm

PNEC (Predicted No-Effect Concentration) : No data available.

**8.2. Exposure controls**

**8.2.1. Appropriate engineering controls**

- : Provide adequate general and local exhaust ventilation  
Systems under pressure should be regularly checked for leakages  
Gas detectors should be used when flammable gases/vapours may be released  
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  
Consider the use of a work permit system e.g. for maintenance activities

**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:  
Wear goggles with suitable filter lenses when use is cutting/welding  
PPE compliant to the recommended EN/ISO standards should be selected

• Eye/face protection

- : Wear safety glasses with side shields  
Standard EN 166 - Personal eye-protection - specifications

• Skin protection

- Hand protection
- Other

- : Wear working gloves when handling gas containers  
Standard EN 388 - Protective gloves against mechanical risk
- : Consider the use of flame resistant anti-static safety clothing  
Standard EN ISO 14116 - Limited flame spread materials  
Standard EN ISO 1149-5 - Protective clothing: Electrostatic properties  
Wear safety shoes while handling containers  
Standard EN ISO 20345 - Personal protective equipment - Safety footwear

• Respiratory protection

- : None necessary

• Thermal hazards

- : None necessary

**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 of overexposure.
pH value	: Not applicable.
Molar mass	: 26 g/mol
Melting point	: -80.8 °C
Boiling point	: -84 °C
Flash point	: Not applicable for gases and gas mixtures.
Critical temperature [°C]	: 35 °C
Evaporation rate (ether=1)	: Not applicable for gases and gas mixtures.
Flammability range	: 2.3 - 100 vol %
Vapour pressure [20°C]	: 44 bar(a)
Vapour pressure [50°C]	: Not applicable.
Relative density, gas (air=1)	: 0.9
Relative density, liquid (water=1)	: Not applicable.
Solubility in water	: 1185 mg/l
Partition coefficient n-octanol/water [log Kow]	: 0.37
Auto-ignition temperature	: 305 °C
Decomposition point [°C]	: 635 °C
Viscosity [20°C]	: Not applicable.
Explosive Properties	: Not applicable
Oxidising Properties	: None

### **9.2. Other information**

Other data : 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 react explosively even in the absence of air  
May decompose violently at high temperature and/or pressure or in the presence of a catalyst

### **10.4. Conditions to avoid**

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

### **10.5. Incompatible materials**

: Forms explosive acetylides with copper, silver and mercury  
Do not use alloys containing more than 65% copper  
Air, Oxidisers  
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	: Classification criteria are not met Acetylene has low inhalation toxicity, the LOAEC for mild intoxication in humans with no residual effects is 100 000ppm (107,000 mg/m <sup>3</sup> ) There are no data on oral and dermal toxicity (studies are not technically feasible as the substance is a gas at room temperature)
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
Germ cell mutagenicity	: No known effects from this product
Carcinogenicity	: No known effects from this product
Toxic for reproduction : Fertility	: No known effects from this product
Toxic for reproduction : unborn child	: 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**

Assessment : Classification criteria are not met.

**12.2. Persistence and degradability**

Assessment : Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.

**12.3. Bioaccumulative potential**

Assessment : Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

**12.4. Mobility in soil**

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

**12.5. Results of PBT and vPvB assessment**

Assessment : Not classified as PBT or vPvB

**12.6. Other adverse effects**

Effect on the ozone layer : No known effects from this product

Effect on global warming : No known effects from this product

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

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 16 05 04 \*: Gases in pressure containers (including halons) containing dangerous substances

**13.2. Additional information**

: Dispose of cylinder via gas supplier only. Cylinder contains a porous material which in some cases contains asbestos fibres and is saturated with a solvent (acetone or dimethylformamide)

**SECTION 14: Transport information****14.1. UN number**

UN-No. : 1001

**14.2. UN proper shipping name**

Transport by road/rail (ADR/RID) : ACETYLENE, DISSOLVED

Transport by air (ICAO-TI / IATA-DGR) : ACETYLENE, DISSOLVED

Transport by sea (IMDG) : ACETYLENE, DISSOLVED

**14.3. Transport hazard class(es)**

Labelling :



2.1 : Flammable gases

**Transport by road/rail (ADR/RID)**

Class : 2

Classification code : 4F

Hazard identification number : 239

Tunnel Restriction : B/D - Tank carriage : Passage forbidden through tunnels of category B, C, D and E. Other carriage : Passage forbidden through tunnels of category D and E

**Transport by air (ICAO-TI / IATA-DGR)**

Class / Div. (Sub. risk(s)) : 2.1

**Transport by sea (IMDG)**

Class / Div. (Sub. risk(s)) : 2.1

Emergency Schedule (EmS) - Fire : F-D

Emergency Schedule (EmS) - Spillage : S-U

**14.4. Packing group**

Transport by road/rail (ADR/RID) : Not applicable

Transport by air (ICAO-TI / IATA-DGR) : Not applicable

Transport by sea (IMDG) : Not applicable

**14.5. Environmental hazards**

Transport by road/rail (ADR/RID) : None.

Transport by air (ICAO-TI / IATA-DGR) : None.

Transport by sea (IMDG) : None.



**14.6. Special precautions for user**

**Packing Instruction(s)**

Transport by road/rail (ADR/RID) : P200  
 Transport by air (ICAO-TI / IATA-DGR)  
     Passenger and Cargo Aircraft : Forbidden  
     Cargo Aircraft only : 200  
 Transport by sea (IMDG) : P200

Special transport precautions : 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.

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

: Not applicable.

**SECTION 15: Regulatory information**

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

**EU-Regulations**

Restrictions on use : None  
 Seveso Directive : 2012/18/EU (Seveso III) : Listed

**National regulations**

National legislation : Ensure all national/local regulations are observed.  
 Water hazard class (WGK) : -  
 Kenn-Nr. : 1182

**15.2. Chemical safety assessment**

: Refer to section 8.2  
 A CSA has been carried out  
 An exposure assessment 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 2015/830.  
 Training advice : Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training.  
 Further information : This Safety Data Sheet has been established in accordance with the applicable European Union legislation.

Full text of H- and EUH-statements

Chem. Unst. Gas A	Chemically Unstable gases, Category A
Flam. Gas 1	Flammable gases, Category 1
Press. Gas (Diss.)	Gases under pressure : Dissolved gas
H220	Extremely flammable gas
H230	May react explosively even in the absence of air
H280	Contains gas under pressure; may explode if heated

## Acetylene (dissolved)

SDS Ref.: LAT-C2H2-001

### 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

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