

# Safety Data Sheet according to Regulation (EC)

## No. 1907/2006 (REACH)

Printed 03.08.2016  
revision 02.08.2016 (GB) Version 8.0

### Acetylene, dissolved

1700



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

### 1.1. Product identifier

Name of product	Acetylene, dissolved
Art-Nr(n):	1700
Name of substance	acetylene (ethyne)
Index No	601-015-00-0
EC No	200-816-9
REACH registration number	01-2119457406-36
CAS No	74-86-2

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Recommended intended purpose(s)

Fuel gas.  
Welding gas.

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

Manufacturer/distributor	GHC Gerling, Holz & Co. Handels GmbH Ruhrstraße 113, D-22761 Hamburg Phone +49 40 853 123-0, Fax +49 40 853 123-66 E-Mail hamburg@ghc.de Internet www.ghc.de
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Advice	GHC Gerling, Holz & Co. Handels GmbH Phone +49 40 853 123-0 Fax +49 40 853 123-66 E-mail (competent person): msds@ghc.de
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### 1.4. Emergency telephone number

Emergency advice	Giftinformationszentrum (Poison Control Centre) Mainz Phone +49 6131 19240
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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Flam. Gas 1	H220
Chem. Unst. Gas A	H230
Diss. Gas	H280

#### Hazard statements for physical hazards

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

#### Additional hints

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

### 2.2. Label elements

# Safety Data Sheet according to Regulation (EC)

## No. 1907/2006 (REACH)

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revision 02.08.2016 (GB) Version 8.0

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#### Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]



GHS02

#### Signal word

Danger

#### Hazard statements for physical hazards

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

#### Precautionary Statements

##### 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

##### Information pertaining to special dangers for human and environment

In high concentrations may cause asphyxiation.  
Contact with liquid may cause cold burns/frostbite.

##### Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

## SECTION 3: Composition/ information on ingredients

### 3.1. Substances

CAS No 74-86-2 **acetylene (ethyne)**  
EC No 200-816-9  
Index No 601-015-00-0  
REACH registration number 01-2119457406-36

#### Additional advice

The text of the H-phrases is shown in section 16.

### 3.2. Mixtures

not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

Remove contaminated soaked clothing immediately.  
Adhere to personal protective measures when giving first aid.  
Seek medical advice immediately.

## Safety Data Sheet according to Regulation (EC)

No. 1907/2006 (REACH)

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### In case of inhalation

Remove the casualty into fresh air and keep him immobile.

Seek medical treatment immediately.

In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

### In case of skin contact

In case of contact with skin wash off immediately with soap and water.

### In case of eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call for a doctor immediately.

### In case of ingestion

Ingestion is not considered a potential route of exposure.

## 4.2. Most important symptoms and effects, both acute and delayed

### Physician's information / possible symptoms

Sensitivity to light

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

### Treatment (Advice to doctor)

Treat symptoms.

In the event of pulmonary irritation treat initially with corticoid spray, e.g. Ventolair- or Pulmicort- metered-dose aerosol (Ventolair and Pulmicort are registered trademarks).

Monitor circulation.

## ! SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### ! Suitable extinguishing media

Foam

Dry powder

Carbon dioxide

Water spray jet

#### ! Unsuitable extinguishing media

carbon dioxide

Full water jet

### 5.2. Special hazards arising from the substance or mixture

In case of fire formation of dangerous gases possible.

Formation of explosive gas mixtures in air.

In the event of fire the following can be released:

Carbon monoxide (CO)

### 5.3. Advice for firefighters

#### Special protective equipment for fire-fighters

Use breathing apparatus with independent air supply (isolated).

#### Additional information

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture / explode.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur.

Extinguish any other fire.

**Safety Data Sheet according to Regulation (EC)  
No. 1907/2006 (REACH)**

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revision 02.08.2016 (GB) Version 8.0

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**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

See chapter 8.

Remove persons to safety.

Keep away sources of ignition.

**6.2. Environmental precautions**

If possible, stop flow of product.

Eliminate ignition sources.

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

**6.3. Methods and material for containment and cleaning up**

Ensure adequate air ventilation.

Allow to vaporise.

**Additional Information**

Informations for safe handling see chapter 7.

Informations for personal protective equipment see chapter 8.

**6.4. Reference to other sections**

No information available.

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**! SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**! Advice on safe handling**

Use only in thoroughly ventilated areas.

Transfer and handle only in enclosed systems.

Containers' temperature may not be increased above 50°C.

Do not heat with open flames.

The working pressure in the receptacle must not exceed 2/3 of the test pressure of the pressure receptacle.

Take measures against electrostatically charging.

Barrels and installations thoroughly earthing (grounding ).

Use antistatic tools.

Treatment only in suitable rooms and systems.

Provide good room ventilation even at ground level (vapours are heavier than air).

Prevent cylinders from falling over.

Ensure valve protection device is correctly fitted.

Ensure valve outlet cap nut or plug (where provided) is correctly fitted.

Open valve slowly to avoid pressure shock.

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.

Do not allow backfeed into the container.

Suck back of water into the container must be prevented.

No water to valves, flanges and other fittings.

Purging of pipes and valves with inert gases - to avoid: water, solvents.

**General protective measures**

Do not inhale gases/vapours/aerosols.

**Hygiene measures**

At work do not eat, drink and smoke.

**Advice on protection against fire and explosion**

The product is combustible.

Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.

Take precautionary measures against static discharges.

# Safety Data Sheet according to Regulation (EC)

## No. 1907/2006 (REACH)

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revision 02.08.2016 (GB) Version 8.0

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1700



Formation of explosive gas mixtures in air.  
Use explosion-proof equipment / fittings and non-sparking tools.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep in closed original container.  
Ventilate store-rooms thoroughly.  
Use transportable pressure equipment.  
Suitable materials: Normalised steel and carbon steel, tempered steel, aluminium alloys, stainless steel.  
Valve: Suitable materials: Brass (Cu < 70%), carbon steels, aluminium alloys, stainless steel.  
Unsuitable materials: Brass and copper alloys (Cu >= 70%).

##### Advice on storage compatibility

Do not store together with combustible liquids or combustible solids.  
Do not store together with animal feedstuffs.  
Do not store together with explosives.  
Do not store together with infectious substances.  
Do not store together with radioactive material.  
Do not store together with toxic liquids or toxic solids.  
Do not store together with food.  
Do not store together with oxidizing agents.

##### Further information on storage conditions

Ensure valve protection device is correctly fitted.  
Keep container tightly closed and store at cool and aired place.  
Prevent cylinders from falling over.  
Storage temperature may not exceed 50°C (=122°F).

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

##### Recommendation(s) for intended use

no

## ! SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
74-86-2	acetylene	8 hours Short-term	2662	2500	NIOSH, USA

##### Additional advice

no

#### 8.2. Exposure controls

##### Respiratory protection

Keep self contained breathing apparatus readily available for emergency use.  
In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

##### ! Hand protection

Leather gloves  
Safety gloves according EN 388

##### ! Eye protection

Wear goggles with suitable filter lenses when use is cutting/welding.  
Safety goggles, in case of increased risk add protective face shield  
Safety goggles with side protection complying with EN 166.

**Safety Data Sheet according to Regulation (EC)****No. 1907/2006 (REACH)**

Printed 03.08.2016

revision 02.08.2016 (GB) Version 8.0

**Acetylene, dissolved**

1700

**Other protection measures**

protective clothing

**Limitation and surveillance of the environment**

See chapter 7.

**! SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties****Appearance**

pressurised dissolved gas

**Colour**

colourless

**Odour**

mildly ethereal

**Odour threshold**

not determined

**Important health, safety and environmental information**

	Value	Temperature	at	Method	Remark
<b>pH value</b>	not applicable				
<b>sublimation point</b>	-84 °C		1013 hPa		
<b>melting point</b>	-80,8 °C				under pressure
<b>Flash point</b>	-84 °C				
<b>Vapourisation rate</b>	not determined				
<b>Flammable (solid)</b>	not applicable				
<b>Flammability (gas)</b>	not determined				
<b>Ignition temperature</b>	325 °C			DIN 51794	
<b>Self ignition temperature</b>	not determined				
<b>Lower explosion limit</b>	2,5 Vol-%				
<b>Upper explosion limit</b>	100 Vol-%				
<b>Vapour pressure</b>	4535 kPa	22 °C			
<b>Relative density</b>	0,729 g/cm <sup>3</sup>	-84 °C			liquid phase
<b>Vapour density</b>	0,908				air = 1
<b>Solubility in water</b>	1185 mg/l	20 °C			
<b>Solubility/other</b>					soluble in organic solvent
<b>Partition coefficient n-octanol/water (log P O/W)</b>	0,37				

**Safety Data Sheet according to Regulation (EC)****No. 1907/2006 (REACH)**

Printed 03.08.2016

revision 02.08.2016 (GB) Version 8.0

**Acetylene, dissolved**

1700

	Value	Temperature	at	Method	Remark
<b>Decomposition temperature</b>	not determined				
<b>Viscosity dynamic</b>	0,103 mPa*s	20 °C			

**Oxidising properties**

No information available.

**Explosive properties**

No information available.

**9.2. Other information**

Poor warning properties at low concentrations.

**SECTION 10: Stability and reactivity****10.1. Reactivity**

See section "Possibility of hazardous reactions".

**10.2. Chemical stability**

Acetylene can decompose spontaneously by explosion to its elements.

May decompose violently at high temperature and / or pressure or in the presence of a catalyst.

Stable under recommended conditions of use and storage (see section 7).

**10.3. Possibility of hazardous reactions**

May react explosively even in the absence of oxygen.

Formation of explosive gas/air mixtures.

Reactions with oxidising agents.

**10.4. Conditions to avoid**

Keep away from heat / sparks / open flames / hot surfaces. No smoking.

High pressure.

Heat sources / heat.

**10.5. Incompatible materials****Substances to avoid**

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 content.

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.

Carbon monoxide

**Thermal decomposition**

Remark No decomposition if used as directed.

**Additional information**

Dissolved in a solvent supported in a porous mass.

**Safety Data Sheet according to Regulation (EC)****No. 1907/2006 (REACH)**

Printed 03.08.2016

revision 02.08.2016 (GB) Version 8.0

**Acetylene, dissolved**

1700

**! SECTION 11: Toxicological information****11.1. Information on toxicological effects****Acute toxicity/Irritation/Sensitization**

	Value/Validation	Species	Method	Remark
<b>LD50 acute oral</b>				Study technically not feasible.
<b>LD50 acute dermal</b>	160500 mg/m3	rat (male)		
<b>LC50 acute inhalation</b>				Study technically not feasible.
<b>Skin irritation</b>	non-irritant			
<b>Eye irritation</b>	non-irritant			
<b>Skin sensitization</b>				Study technically not feasible.
<b>Sensitization respiratory system</b>				Study technically not feasible.

**Subacute Toxicity - Carcinogenicity**

	Value	Species	Method	Validation
<b>Subacute Toxicity</b>				Study scientifically not justified.
	Sub-acute inhalation toxicity			
<b>Subchronic Toxicity</b>				Study scientifically not justified.
<b>Chronic Toxicity</b>				Study scientifically not justified.
<b>Mutagenicity</b>	Inhalation 0 - 50 Vol-% (4 - 24 h)  Inhalation. Lymphoma L5178Y cells	Mouse	OECD 476	No experimental information on genotoxicity in vitro available.
<b>Reproduction-Toxicity</b>	not determined			Study scientifically not justified.
<b>Carcinogenicity</b>	NOAEC 20 ppm ( $\geq$ 1 - 1,5 a)  Inhalation. Information concerns to main component. 6 h/d, 1 d/w, 12m - 6h/d, 1d/w, 18m - 6h/d, 2d/w, 12m	Mouse		Indications of possible carcinogenic effects in animal studies are available.

**Specific target organ toxicity (single exposure)**

No effects from this product are known.



**Safety Data Sheet according to Regulation (EC)****No. 1907/2006 (REACH)**Printed 03.08.2016  
revision 02.08.2016 (GB) Version 8.0**Acetylene, dissolved**

1700

**Specific target organ toxicity (repeated exposure)**

No effects from this product are known.

**Aspiration hazard**

Not applicable for gases and gas mixtures

**Toxicity test (Additional information)**

No experimental indication of genotoxicity in vitro (Ames-test negative).

**Experiences made from practice**

Gases have a suffocating effect.

Inhalation causes narcotic effect/intoxication.

**SECTION 12: Ecological information****12.1. Toxicity****Ecotoxicological effects**

	Value	Species	Method	Validation
<b>Fish</b>	LC50 545 mg/l (96 h)	Fish	QSAR	
<b>Daphnia</b>	LC50 242 mg/l (48 h)	Daphnia	QSAR	
<b>Algae</b>	EC50 57 mg/l (96 h)	Chlorobionta	QSAR	
<b>Bacteria</b>	No data available			

**12.2. Persistence and degradability**

	Elimination rate	Method of analysis	Method	Validation
<b>Physico-chemical degradability</b>	At normal temperature very highly volatile or gaseous product that can be released to atmosphere. Elimination test cannot be employed.			

**Degradability**

Will rapidly degraded by indirect photolysis in air. Will not hydrolyze.

**12.3. Bioaccumulative potential**

Because of the n-octanol/water distribution coefficient (log K o/w) accumulation in organisms is not expected.

**12.4. Mobility in soil**

Adsorption in the soil is not likely.

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

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Other adverse effects**

no

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Waste code No.**

15 01 11\*

**Name of waste**

metallic packaging containing a hazardous solid porous matrix (for example asbestos), including empty pressure containers

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

**Safety Data Sheet according to Regulation (EC)****No. 1907/2006 (REACH)**

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revision 02.08.2016 (GB) Version 8.0

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1700

**Recommendations for the product**

Dispose of as hazardous waste.

**Recommendations for packaging**

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

Dispose of cylinder via gas supplier only; porous material may contain asbestos.

**SECTION 14: Transport information**

	ADR/RID	IMDG	IATA-DGR
<b>14.1. UN number</b>	1001	1001	1001
<b>14.2. UN proper shipping name</b>	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	Acetylene, dissolved
<b>14.3. Transport hazard class(es)</b>	2.1	2.1	2.1
<b>14.4. Packing group</b>	-	-	-
<b>14.5. Environmental hazards</b>	No	No	No

**14.6. Special precautions for user**

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

No transport as bulk according IBC - Code.

**Land and inland navigation transport ADR/RID**

Hazard label(s) 2.1

tunnel restriction code B/D

Classification code 4F

**Marine transport IMDG**

Ems: F-D, S-U

**! SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Other regulations (EU)**

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 40.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.

**VOC standard****VOC content** >=99 % 20 °C 44000 hPa**15.2. Chemical Safety Assessment**

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

For this substance a chemical safety assessment has been carried out.

An exposure scenario is not required.

**Safety Data Sheet according to Regulation (EC)  
No. 1907/2006 (REACH)**

Printed 03.08.2016  
revision 02.08.2016 (GB) Version 8.0

**Acetylene, dissolved**  
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**SECTION 16: Other information**

**Recommended uses and restrictions**

National and local regulations concerning chemicals shall be observed.

**Further information**

All declarations of safety-data-sheet refer to pure substance.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 7.6