

**Acetylene (dissolved)****001**

Country : DE / Language : EN

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

Trade name : Acetylene (dissolved), ACETYLENE N26, ACETYLENE ALTOP  
SDS no : 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 : C<sub>2</sub>H<sub>2</sub>

**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.  
See the list of identified uses and exposure scenarios in the annex of the safety data sheet.  
Contact supplier for more information on uses.  
Uses advised against : Consumer use.

**1.3. Details of the supplier of the safety data sheet****Company identification****Supplier**

AIR LIQUIDE Deutschland GmbH  
Luise-Rainer-Straße 5  
40235 Düsseldorf - GERMANY  
T +49 (0)211 6699-0 - F +49 (0)211 6699-222  
[info@airliquide.de](mailto:info@airliquide.de)

E-Mail address (competent person) : info.SDB@airliquide.de

**1.4. Emergency telephone number**

Emergency telephone number : +49 (0)2151 398668  
Availability  
( 24 / 7 )

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Physical hazards	Flammable gases, Category 1	H220
	Chemically Unstable gases, Category A	H230
	Gases under pressure : Dissolved gas	H280

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

Hazard pictograms (CLP) :



GHS02

GHS04

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

**Acetylene (dissolved)****001**

Country : DE / Language : EN

smoking..

- Response : P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely..  
P381 - In case of leakage, eliminate all ignition sources.
- Storage : P403 - Store in a well-ventilated place..

Supplemental 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).

**2.3. Other hazards**

: None.

**SECTION 3: Composition/information on ingredients****3.1. Substances**

Name	Product identifier	Composition [V-%]:	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

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. 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.

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

**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**

: Refer to section 11.

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

: None.

**SECTION 5: Firefighting measures****5.1. Extinguishing media**

- Suitable extinguishing media : Water spray or fog.  
Dry powder.
- Unsuitable extinguishing media : Carbon dioxide.  
Do not use water jet to extinguish.

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

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

**Acetylene (dissolved)****001**

Country : DE / Language : EN

**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.

Monitor concentration of released product.

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.

**Acetylene (dissolved)****001**

Country : DE / Language : EN

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.  
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.  
Ensure equipment is adequately earthed.

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.
- Suck back of water into the container must be prevented.
- Open valve slowly to avoid pressure shock.

**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.

## Acetylene (dissolved)

**001**

Country : DE / Language : EN

<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.
- Product to be handled in a closed system.
- Systems under pressure should be regularly checked for leakages.
- Ensure exposure is below occupational exposure limits (where available).
- Gas detectors should be used when flammable gases/vapours may be released.
- 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:  
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 : Wear working gloves when handling gas containers.  
Standard EN 388 - Protective gloves against mechanical risk.
  - Other : 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 : Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known.  
Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers.  
Gas filters do not protect against oxygen deficiency.  
Standard EN 14387 - Gas filter(s), combined filter(s) and full face mask - EN 136.
- Thermal hazards : Wear goggles with suitable filter lenses when use is cutting/welding.

#### 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.

Melting point : -80.8 °C

Boiling point : -84 °C

Flash point : Not applicable for gases and gas mixtures.

Flammability range : 2.3 - 100 vol %

**Acetylene (dissolved)****001**

Country : DE / Language : EN

Relative vapour density at 20 °C	: Not applicable.
Evaporation rate (ether=1)	: Not applicable for gases and gas mixtures.
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
pH value	: Not applicable for gases and gas mixtures.
Partition coefficient n-octanol/water [log Kow]	: 0.37
Decomposition point [°C]	: Not applicable.
Auto-ignition temperature	: 305 °C
Viscosity [20°C]	: No reliable data available.
Explosive Properties	: Not applicable.
Oxidising Properties	: Not applicable.

**9.2. Other information**

Molar mass	: 26 g/mol
Critical temperature [°C]	: 35 °C
Other data	: No additional information available

**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).  
May react explosively even in the absence of air.

**10.3. Possibility of hazardous reactions**

: Can form explosive mixture with air.  
May react violently with oxidants.  
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.  
Avoid moisture in installation systems.

**10.5. Incompatible materials**

: Air, Oxidisers.  
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**

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

**Acetylene (dissolved)****001**

Country : DE / Language : EN

**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

<b>Acute toxicity</b>	: 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).
<b>Skin corrosion/irritation</b>	: No known effects from this product.
<b>Serious eye damage/irritation</b>	: No known effects from this product.
<b>Respiratory or skin sensitisation</b>	: No known effects from this product.
<b>Germ cell mutagenicity</b>	: No known effects from this product.
<b>Carcinogenicity</b>	: No known effects from this product.
<b>Reproductive toxicity</b>	:
Toxic for reproduction : Fertility	: No known effects from this product.
Toxic for reproduction : unborn child	: No known effects from this product.
<b>STOT-single exposure</b>	: No known effects from this product.
<b>STOT-repeated exposure</b>	: No known effects from this product.
<b>Aspiration hazard</b>	: Not applicable for gases and gas mixtures.

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

Assessment	: Classification criteria are not met.
EC50 48h - Daphnia magna [mg/l]	: 242 mg/l
EC50 72h - Algae [mg/l]	: 57 mg/l
LC50 96 h - Fish [mg/l]	: 545 mg/l

**12.2. Persistence and degradability**

Assessment	: Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.
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**12.3. Bioaccumulative potential**

Assessment	: Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
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**12.4. Mobility in soil**

Assessment	: Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.
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**12.5. Results of PBT and vPvB assessment**

Assessment	: Not classified as PBT or vPvB.
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**12.6. Other adverse effects**

Other adverse effects	: No known effects from this product.
Effect on the ozone layer	: None.
Effect on global warming	: No known effects from this product.

**Acetylene (dissolved)****001**

Country : DE / Language : EN

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

Contact supplier if guidance is required.

Do not discharge into any place where its accumulation could be dangerous.

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.

Return unused product in original cylinder to supplier.

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). External treatment and disposal of waste should comply with applicable local and/or national regulations.

**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 established.

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

Transport by sea (IMDG) : Not established.

**14.5. Environmental hazards**

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

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



**Acetylene (dissolved)****001**

Country : DE / Language : EN

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.

**Germany**

Water hazard class (WGK) : Water hazard class (WGK) nwg, Non-hazardous to water (Classification according to VwVwS, Annex 1 or 2; ID No. 1182)

Other information, restrictions and prohibition regulations : [German regulations] BetriebssicherheitsV mit TRBSen insbesondere TRBS 3145 / TRGS 725 Ortsbewegliche Druckgasbehälter, TRBS 2141, BGR Regel 500 Teil 2.33: "Umgang mit Gasen", GefahrstoffV mit Technischen Regeln Gefährliche Stoffe TRGS insbesondere TRGS 407 "Tätigkeiten mit Gasen - Gefährdungsbeurteilung", TRGS 400, 500, 510, 900." BGR 104, TRBS 2152.

**15.2. Chemical safety assessment**

A CSA has been carried out.

**SECTION 16: Other information**

Indication of changes : Revised safety data sheet in accordance with commission regulation (EU) No 453/2010.

Abbreviations and acronyms : ATE - Acute Toxicity Estimate  
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008  
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006  
EINECS - European Inventory of Existing Commercial Chemical Substances

**Acetylene (dissolved)****001**

Country : DE / Language : EN

CAS# - Chemical Abstract Service number  
PPE - Personal Protection Equipment  
LC50 - Lethal Concentration to 50 % of a test population  
RMM - Risk Management Measures  
PBT - Persistent, Bioaccumulative and Toxic  
vPvB - Very Persistent and Very Bioaccumulative  
STOT- SE : Specific Target Organ Toxicity - Single Exposure  
CSA - Chemical Safety Assessment  
EN - European Standard  
UN - United Nations  
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road  
IATA - International Air Transport Association  
IMDG code - International Maritime Dangerous Goods  
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail  
WGK - Water Hazard Class

Training advice

: Ensure operators understand the flammability hazard.

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.

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.

	<b>SAFETY DATA SHEET</b>	Page : 11/15
		Revised edition no : 4.00
		Revision date : 2018-05-30
		Supersedes : 2015-07-20
<b>Acetylene (dissolved)</b>		<b>001</b>
		Country : DE / Language : EN

## Annex to the safety data sheet

This Annex documents the Exposure Scenarios (ESs) related to the identified uses of the registered substance. The ESs detail protective measures for workers and the environment in addition to those described in sections 7, 8, 11, 12 and 13 of the SDS that are required to ensure that the potential exposure to workers and the environment remains within acceptable levels for each of the identified uses.

### Table of contents of the Annex

Identified Uses	Es N°	Short title	Page
Formulation of mixtures in pressure receptacles	001-1	Industrial uses, closed contained conditions	<b>12</b>
Transfilling in pressure receptacles	001-1	Industrial uses, closed contained conditions	<b>12</b>
Calibration of analysis equipment	001-1	Industrial uses, closed contained conditions	<b>12</b>
Feedstock in chemical processes	001-1	Industrial uses, closed contained conditions	<b>12</b>
Fuel gas for welding, cutting, heating, brazing and soldering applications.	001-1	Industrial uses, closed contained conditions	<b>12</b>
Fuel gas for welding, cutting, heating, brazing and soldering applications.	001-2	Professional uses	<b>14</b>

## Acetylene (dissolved)

**001**

Country : DE / Language : EN

### 1. 001-1: Industrial uses, closed contained conditions

#### 1.1. Title section

#### Industrial uses, closed contained conditions

ES Ref.: 001-1

Association ref code: EIGA001-1

Revision date: 01/10/2016

Processes, tasks, activities covered	Industrial uses, including product transfers and associated laboratory activities within different closed or contained systems Formulation
Environment	Use descriptors
CS1	ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC7, ERC8d
Worker	Use descriptors
CS2	PROC1, PROC2, PROC3, PROC8b, PROC9
Assessment method	ECETOC TRA 2.0

#### 1.2. Conditions of use affecting exposure

##### 1.2.1. Control of environmental exposure: ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC7, ERC8d

ERC1	Manufacture of substances
ERC2	Formulation of preparations
ERC4	Industrial use of processing aids in processes and products, not becoming part of articles
ERC6a	Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b	Industrial use of reactive processing aids
ERC7	Industrial use of substances in closed systems
ERC8d	Wide dispersive outdoor use of processing aids in open systems

##### Product (article) characteristics

Physical form of product	See section 9 of the SDS, No additional information
Concentration of substance in product	<= 100 %

##### Amount used, frequency and duration of use (or from service life)

The actual tonnage handled per site is not considered to influence the immissions as such for this scenario as there is practically no release	
Emission Days (days/year)	260

##### Technical and organisational conditions and measures

Ensure operatives are trained to minimise releases	
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##### Conditions and measures related to sewage treatment plant

Wastewater emission controls are not applicable as there is no direct release to wastewater	
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##### Conditions and measures related to treatment of waste (including article waste)

See section 13 of the SDS	
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##### Other conditions affecting environmental exposure

No additional information	
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##### 1.2.2. Control of worker exposure: PROC1, PROC2, PROC3, PROC8b, PROC9

PROC1	Use in closed process, no likelihood of exposure
PROC2	Use in closed, continuous process with occasional controlled exposure
PROC3	Use in closed batch process (synthesis or formulation)
PROC8b	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

##### Product (article) characteristics

Physical form of product	See section 9 of the SDS, No additional information
Concentration of substance in product	<= 100 %

##### Amount used (or contained in articles), frequency and duration of use/exposure

The actual tonnage handled per shift is not considered	
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## Acetylene (dissolved)

**001**

Country : DE / Language : EN

to influence the exposure as such for this scenario. Instead, the combination of the scale of operation (industrial vs. professional) and level of containment/automation (as reflected in the PROCs and technical conditions) is the main determinant of the process-intrinsic emission potential.

Exposure duration <= 8 h/day

Covers frequency up to: 5 days/week

### Technical and organisational conditions and measures

See section 7 of the SDS.

Handle product within a closed system

Apply a good standard of general or controlled ventilation when maintenance activities are carried out.

Ensure operatives are trained to minimise exposure

Ensure supervision is in place to check that the RMMs are in place and are being used correctly and that the OCs are being followed

### Conditions and measures related to personal protection, hygiene and health evaluation

See section 8 of the SDS.

### Other conditions affecting workers exposure

Indoor or outdoor use

## 1.3. Exposure estimation and reference to its source

### 1.3.1. Environmental release and exposure: ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC7, ERC8d

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.

### 1.3.2. Worker exposure: PROC1, PROC2, PROC3, PROC8b, PROC9

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.

## 1.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

### 1.4.1. Environment

Guidance - Environment      Check that RMMs and OCs are as described above or of equivalent efficiency

### 1.4.2. Health

Guidance - Health      Check that RMMs and OCs are as described above or of equivalent efficiency

## Acetylene (dissolved)

**001**

Country : DE / Language : EN

### 2. 001-2: Professional uses

#### 2.1. Title section

##### Professional uses

ES Ref.: 001-2

Association ref code: EIGA001-2

Revision date: 01/10/2016

Processes, tasks, activities covered	Professional uses, including transfer of product in non-industrial settings Formulation
Environment	Use descriptors
CS1	ERC9a, ERC9b
Worker	Use descriptors
CS2	PROC4, PROC8a
Assessment method	ECETOC TRA 2.0

#### 2.2. Conditions of use affecting exposure

##### 2.2.1. Control of environmental exposure: ERC9a, ERC9b

ERC9a	Wide dispersive indoor use of substances in closed systems
ERC9b	Wide dispersive outdoor use of substances in closed systems

##### Product (article) characteristics

Physical form of product	See section 9 of the SDS, No additional information
Concentration of substance in product	<= 100 %

##### Amount used, frequency and duration of use (or from service life)

The actual tonnage handled per site is not considered to influence the immissions as such for this scenario as there is practically no release	
Emission Days (days/year)	260

##### Technical and organisational conditions and measures

Ensure operatives are trained to minimise releases	
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##### Conditions and measures related to sewage treatment plant

Wastewater emission controls are not applicable as there is no direct release to wastewater	
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##### Conditions and measures related to treatment of waste (including article waste)

See section 13 of the SDS	
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##### Other conditions affecting environmental exposure

No additional information	
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##### 2.2.2. Control of worker exposure: PROC4, PROC8a

PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
PROC8a	Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities

##### Product (article) characteristics

Physical form of product	See section 9 of the SDS, No additional information
Concentration of substance in product	<= 100 %

##### Amount used (or contained in articles), frequency and duration of use/exposure

The actual tonnage handled per shift is not considered to influence the exposure as such for this scenario. Instead, the combination of the scale of operation (industrial vs. professional) and level of containment/automation (as reflected in the PROCs and technical conditions) is the main determinant of the process-intrinsic emission potential.	
Exposure duration	<= 8 h/day
Covers frequency up to:	5 days/week

##### Technical and organisational conditions and measures

See section 7 of the SDS.	
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**Acetylene (dissolved)****001**

Country : DE / Language : EN

Handle product within a closed system	
Apply a good standard of general or controlled ventilation when maintenance activities are carried out.	
Ensure operatives are trained to minimise exposure	
Ensure supervision is in place to check that the RMMs are in place and are being used correctly and that the OCs are being followed	

<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	
See section 8 of the SDS.	

<b>Other conditions affecting workers exposure</b>	
Indoor or outdoor use	

**2.3. Exposure estimation and reference to its source****2.3.1. Environmental release and exposure: ERC9a, ERC9b**

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.

**2.3.2. Worker exposure: PROC4, PROC8a****2.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES****2.4.1. Environment**

Guidance - Environment	Check that RMMs and OCs are as described above or of equivalent efficiency
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**2.4.2. Health**

Guidance - Health	Check that RMMs and OCs are as described above or of equivalent efficiency
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