

Safety Data Sheet

Acetylene (dissolved) - (cylinders)

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Reference number: EIGA001-ACE
Issue date: 1-7-2017 Revision date: 1-1-2022 Supersedes version of: 1-7-2017 Version: 5.0

Danger



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

1.1. Product identifier

Trade name : Acetylene (dissolved) - (cylinders)
SDS no : EIGA001-ACE
Other means of identification : Acetylene (dissolved) - (cylinders)
CAS-No. : 74-86-2
EC-No. : 200-816-9
EC Index-No. : 601-015-00-0
REACH 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 : See the list of identified uses and exposure scenarios in the annex of the safety data sheet.
Consumer use.
Perform risk assessment prior to use.
Uses advised against : None.

1.3. Details of the supplier of the safety data sheet

THE NETHERLANDS:
AIR LIQUIDE BV
De Witbogt 1
5652 AG Eindhoven
the Netherlands-Nederland

BELGIUM:
L'AIR LIQUIDE BELGE S.A./N.V.
Avenue de Bourget / Bourgetlaan 44
1130 Bruxelles-Brussel
Belgium-Belgique-België

LUXEMBURG:
L'AIR LIQUIDE LUXEMBOURG S.A.
ZONE P.E.D.-B.P.20
L-4801 RODANGE Luxemburg

infosafetydatasheet.albv@airliquide.com
www.airliquide-benelux.com

1.4. Emergency telephone number

Emergency telephone number : NL: +31 (0)40 250 35 03 / BE: +32 (0)2 431 72 00 / LUX: +352 50 62 63 1

Country	Organisation/Company	Address	Emergency number	Comment
Belgium	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 1120 Bruxelles/Brussel	+32 70 245 245	Please dial: 070 245 245 for any urgent questions about intoxication (free of charge 24/7), if not accessible, dial: 02 264 96 30 (standard fee)
Luxembourg	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 1120 Bruxelles/Brussel	+352 8002 5500	Free telephone number with a 24/7 access. Experts answer all urgency questions on dangerous products in French, or German
Netherlands	Nationaal Vergiftigingen Informatie Centrum	Huispostnummer B.00.118 Postbus 85500 3508 GA Utrecht	+31 88 755 80 00	Only for the purpose of informing medical personnel in cases of acute intoxications

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 1A, Chemically unstable gas A H220;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 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

Asphyxiant in high concentrations.
These high concentrations are within the flammability range.
The substance/mixture has no endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

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

For safety reasons, the acetylene is dissolved in acetone (Flam. Liq. 2, Eye Irrit. 2, STOT SE 3) 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.

3.2. Mixtures

Not established.

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. Perform cardiopulmonary resuscitation 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.

See 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.
Carbon dioxide.
Shutting off the source of the gas is the preferred method of control.
Be aware of the risk of formation of static electricity with the use of CO2 extinguishers. Do not use them in places where a flammable atmosphere may be present.
- Unsuitable extinguishing media : 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.

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

- For non-emergency personnel : Act in accordance with local emergency plan.
Try to stop release.
Evacuate area.
Eliminate ignition sources.
Ensure adequate air ventilation.
Stay upwind.
See section 8 of the SDS for more information on personal protective equipment
- For emergency responders : 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.
See section 5.3 of the SDS for more information.

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

- : Do not breathe gas.
- Avoid release of product into work area.
- 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.
- 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).

Safe handling of the gas receptacle

- : Suck back of water into the container must be prevented.
- Open valve slowly to avoid pressure shock.
- Refer to supplier's container handling instructions.
- Do not allow backfeed into the container.
- Protect containers from physical damage; do not drag, roll, slide or drop.
- Do not remove or deface labels provided by the supplier for the identification of the content of the container.
- 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 valve discontinue use and contact supplier.
- Close container valve after each use and when empty, even if still connected to equipment.
- Never attempt to repair or modify container valves or safety relief devices.
- Damaged valves should be reported immediately to the supplier.
- Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
- Keep container valve outlets clean and free from contaminants particularly oil and water.
- 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.

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

Acetylene (dissolved) - (cylinders) (74-86-2)	
Belgium - Occupational Exposure Limits	
Local name	Acétylène # Acetyleen
Remark	A: la mention "A" signifie que l'agent libère un gaz ou une vapeur qui n'ont en eux-mêmes aucun effet physiologique mais peuvent diminuer le taux d'oxygène dans l'air. Lorsque le taux d'oxygène descend en dessous de 17-18 % (vol/vol) le manque d'oxygène provoque des suffocations qu'aucun symptôme préalable n'annonce. # A: de vermelding "A" betekent dat dit agens gas of damp vrijgeeft dat of die op zich geen fysiologische werking heeft, maar het zuurstofgehalte in de lucht verlaagt. Wanneer het zuurstofgehalte daalt onder de 17-18 % (vol/vol), veroorzaakt het zuurstoftekort verstikking, die zich manifesteert zonder dat er een waarschuwing aan voorafgaat.
Regulatory reference	Koninklijk besluit/Arrêté royal 19/11/2020

Acetylene (dissolved) - (cylinders) (74-86-2)	
DNEL: Derived no effect level (Workers)	
Acute - systemic effects, inhalation	2675 mg/m³
Long-term - systemic effects, inhalation	2675 mg/m³

PNEC (Predicted No-Effect Concentration) : None established.

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 toxic gases 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 : Wear working gloves when handling gas containers.
Standard EN 388 - Protective gloves against mechanical risk, performance level 1 or higher.
: Consider the use of flame resistant anti-static safety clothing.
Standard EN ISO 14116 - Limited flame spread materials.
Standard EN 1149-5 - Protective clothing: Electrostatic properties.
Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
 - Respiratory protection : Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.
Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.
Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.
 - 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 is subjective and inadequate to warn of overexposure.
pH	: Not applicable for gases and gas mixtures.
Melting point / Freezing point	: -80,8 °C
Boiling point	: -84 °C
Flash point	: Not applicable for gases and gas mixtures.
Flammability	: Extremely flammable gas.
Explosive limits	: 2,3 – 100 vol %
Lower explosive limit (LEL)	: 2,3
Upper explosive limit (UEL)	: 100
Vapour pressure [20°C]	: 44 bar(a)
Vapour pressure [50°C]	: Not applicable.
Density	: Not applicable
Vapour density	: 0,9
Relative density, liquid (water=1)	: Not applicable.
Relative density, gas (air=1)	: 0,9
Water solubility	: 1185 mg/l
Partition coefficient n-octanol/water (Log Kow)	: 0,37
Auto-ignition temperature	: 305 °C
Decomposition temperature	: Not applicable.
Viscosity, kinematic	: No reliable data available.
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Oxidising properties : No oxidising properties.
- Coefficient of oxygen equivalency (Ci) : Not applicable.
Critical temperature [°C] : 35 °C

9.2.2. Other safety characteristics

Molar mass : 26 g/mol
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).
May react explosively even in the absence of air.

10.3. Possibility of hazardous reactions

May decompose violently at high temperature and/or pressure or in the presence of a catalyst.
Can form explosive mixture with air.
May react violently with oxidants.
May react explosively even in the absence of air.

10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Avoid moisture in installation systems.
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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity : Acetylene has low inhalation toxicity, the LOAEC for mild intoxication in humans with no residual effects is 100 000ppm (107,000 mg/m³).
There are no data on oral and dermal toxicity (studies are not technically feasible as the substance is a gas at room temperature).

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.

11.2. Information on other hazards

No additional information available

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). See 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. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Other adverse effects	: No known effects from this product.
Effect on the ozone layer	: No effect on the ozone layer.
Effect on global warming	: No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contact supplier if guidance is required.
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.
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 container to supplier.
List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 04 *: Gases in pressure containers (including halons) containing hazardous 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 or ID number

In accordance with ADR / RID / IMDG / IATA / ADN

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.

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 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. Maritime transport in bulk according to IMO instruments

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

Regulatory reference : Ensure all national/local regulations are observed.

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.

Section	Changed item	Change	Comments
	Supersedes	Modified	
	Revision date	Modified	
	Uses advised against	Modified	
2.3	Other hazards which do not result in classification	Modified	
8	Regulatory reference	Added	
8.1	Remark	Added	
8.1	Local name	Added	
8.2	Respiratory protection	Modified	
9.1	Oxidising properties	Modified	
9.1	Flash point	Removed	

Safety Data Sheet

Acetylene (dissolved) - (cylinders)

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Reference number: EIGA001-ACE

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
 - 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
 - STOT - RE : Specific Target Organ Toxicity - Repeated Exposure
 - UFI : Unique Formula Identifier
- Training advice : Ensure operators understand the flammability hazard.
- Further information : Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).
Key literature references and sources of data are maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at <http://www.Eiga.eu> .

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

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.

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.

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Fuel gas for welding, cutting, heating, brazing and soldering applications.	EIGA001-1	Industrial uses, closed contained conditions	14
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Fuel gas for welding, cutting, heating, brazing and soldering applications.	EIGA001-3	Consumer use.	19

Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet
 Reference number: EIGA001-ACE
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

1. EIGA001-1 - Industrial uses, closed contained conditions

1.1. Title section

Industrial uses, closed contained conditions

ES Ref.: EIGA001-1
 ES Type: Worker - EIGA
 Revision date: 2-12-2019

Processes, tasks, activities covered	Industrial uses, including product transfers and associated laboratory activities within different closed or contained systems
Assessment method	ECETOC TRA 2.0

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Manufacture of the substance, Formulation into mixture, Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use of intermediate, Use of reactive processing aid at industrial site (no inclusion into or onto article), Use of functional fluid at industrial site, Use of functional fluid at industrial site, Widespread use of functional fluid (indoor), Widespread use of functional fluid (outdoor) (ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC7, ERC8d, ERC9a, ERC9b)

ERC1	Manufacture of the substance
ERC2	Formulation into mixture
ERC4	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a	Use of intermediate
ERC6b	Use of reactive processing aid at industrial site (no inclusion into or onto article)
ERC7	Use of functional fluid at industrial site
ERC8d	Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
ERC9a	Widespread use of functional fluid (indoor)
ERC9b	Widespread use of functional fluid (outdoor)

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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Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet
 Reference number: EIGA001-ACE
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

Conditions and measures related to treatment of waste (including article waste)

See section 13 of the SDS

Other conditions affecting environmental exposure

No additional information

1.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions, Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions, Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition, Transfer of substance or mixture (charging and discharging) at dedicated facilities, Transfer of substance or mixture into small containers (dedicated filling line, including weighing), Use of fuels (PROC1, PROC2, PROC3, PROC8b, PROC9, PROC16)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC16	Use of fuels

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 and level of containment/automation (as reflected in the 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 sections 2 and 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	

Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet
Reference number: EIGA001-ACE
CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

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

No data available

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

Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet
 Reference number: EIGA001-ACE
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

2. EIGA001-2 - Professional uses

2.1. Title section

Professional uses

ES Ref.: EIGA001-2
 ES Type: Worker - EIGA
 Revision date: 2-12-2019

Processes, tasks, activities covered	Professional uses, including transfer of product in non-industrial settings
Assessment method	ECETOC TRA 2.0

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Widespread use of functional fluid (indoor), Widespread use of functional fluid (outdoor) (ERC9a, ERC9b)

ERC9a	Widespread use of functional fluid (indoor)
ERC9b	Widespread use of functional fluid (outdoor)

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)

No additional information	
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Technical and organisational conditions and measures

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

No additional information	
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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

Closed systems are used in order to prevent unintended emissions		
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2.2.2. Control of worker exposure: Use of fuels (PROC16)

PROC16	Use of fuels
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Product (article) characteristics

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

Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet
 Reference number: EIGA001-ACE
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

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 and level of containment/automation (as reflected in the 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

Handle product within a closed system	
Apply a good standard of general or controlled ventilation when maintenance activities are carried out.	
See sections 2 and 7 of the SDS.	
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.	
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Other conditions affecting workers exposure

Indoor or outdoor use	
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2.3. Exposure estimation and reference to its source

No data available

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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Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet
 Reference number: EIGA001-ACE
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

3. EIGA001-3 - Consumer use.

3.1. Title section

Consumer use.

ES Ref.: EIGA001-3
 ES Type: Consumer - EIGA
 Revision date: 2-12-2019

Processes, tasks, activities covered

Consumer use.
 Use as a fuel.

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Widespread use of functional fluid (indoor). Widespread use of functional fluid (outdoor). (ERC9a, ERC9b)

ERC9a	Widespread use of functional fluid (indoor)
ERC9b	Widespread use of functional fluid (outdoor)

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)

No additional information

Conditions and measures related to treatment of waste (including article waste)

See section 13 of the SDS

Other conditions affecting environmental exposure

Closed systems are used in order to prevent unintended emissions

3.2.2. Control of consumer exposure: (PC13)

PC13	Fuels
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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 and level of containment/automation (as reflected in the technical conditions) is the main determinant of the process-intrinsic emission potential.

Exposure duration	≤ 8 h/day
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Exposure scenario

Acetylene (dissolved) - (cylinders)

Annex to the safety data sheet

Reference number: EIGA001-ACE

CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

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

Covers frequency up to:	5 days/week
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Measures related to information and behavioural advice to consumers including personal protection and hygiene

See section 8 of the SDS.	
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Other conditions affecting consumer exposure

Indoor or outdoor use	
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3.3. Exposure estimation and reference to its source

No data available

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

3.4.1. Environment

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

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