

Acetylene (dissolved)**NOAL_0001**

Country : SE / Language : EN

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

Trade name : Acetylene (dissolved), Acetylene, Flamal Acetylene, Alphagaz 1 Acetylene, Altop Acetylene, Albee Flame Ace

SDS no : NOAL_0001

Other means of identification : Acetylene (dissolved)

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.
Perform risk assessment prior to use.

Uses advised against : Consumer use.
Uses other than those listed above are not supported, contact your supplier for more information on other uses.

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

AIR LIQUIDE GAS AB
Lundavägen 151
21209 Malmö - SWEDEN
T +46 40 38 10 00
info.sweden@airliquide.com

E-Mail address (competent person) : eunordic-sds@airliquide.com

1.4. Emergency telephone number

Emergency telephone number : 112
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 1A | 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

| | | |
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| | |
|--------------------------------|--|
| 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. 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. P381 - In case of leakage, eliminate all ignition sources. |
| - Storage | : P403 - Store in a well-ventilated place. P410+P403 - Protect from sunlight. 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 | 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 REACH registration No: 01-2119457406-36 | 100 | Flam. Gas 1A, H220 Chem. Unst. Gas A, H230 Press. Gas (Diss.), H280 |

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.

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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.
Shutting off the source of the gas is the preferred method of control.
- Unsuitable extinguishing media : Do not use water jet to extinguish.
Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- Specific hazards : Exposure to fire may cause containers to rupture/explode.

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.
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.

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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 atmosphere.
- 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.
- 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 containers 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 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 content of the container.
- 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.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Acetylene (dissolved) (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. # 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. |
| Bulgaria - Occupational Exposure Limits | |
| Local name | Ацетилен |
| OEL TWA | 20 mg/m ³ |
| Finland - Occupational Exposure Limits | |
| Local name | Asetyleeni |
| Ireland - Occupational Exposure Limits | |
| Local name | Acetylene |
| Spain - Occupational Exposure Limits | |
| Local name | Acetileno |
| Remark | b (Asfixiantes simples. Ciertos gases y vapores presentes en el aire actúan desplazando al oxígeno y disminuyendo su concentración en el aire, sin efecto toxicológico. Estas sustancias no tienen un valor límite ambiental asignado y el único factor limitador de la concentración viene dado por el oxígeno disponible en el aire, que debe ser al menos del 19,5 % de O ₂ equivalente a nivel del mar. Este valor proporciona una cantidad adecuada de oxígeno para la mayoría de los trabajos realizados, incluyendo un margen de seguridad). |
| Switzerland - Occupational Exposure Limits | |
| Local name | Acetylen |
| MAK (OEL TWA) [1] | 1080 mg/m ³ |
| MAK (OEL TWA) [2] | 1000 ppm |
| Remark | Asphyxie |
| USA - ACGIH - Occupational Exposure Limits | |
| Local name | Acetylene |
| Remark (ACGIH) | Simple Asphyxiant |

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DNEL: Derived no effect level (Workers)

| | |
|--|------------------------------------|
| Acute - systemic effects, inhalation | 2675 mg/m ³ 2500 ppm |
| Long-term - systemic effects, inhalation | 2675 mg/m ³ 2500 ppm |

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 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, performance level 1 or higher.
 - Other : 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 is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.
- Thermal hazards : None in addition to the above sections.

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

- : Odourless.
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
- : -80.8 °C

Boiling point

- : -84 °C

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| | |
|---|--|
| Flash point | : Not applicable for gases and gas mixtures. |
| Flammability | : Extremely flammable gas |
| Explosive limits | : 2.3 – 100 vol % |
| Lower explosion limit | : Not available |
| Upper explosion limit | : Not available |
| Vapour pressure [20°C] | : 44 bar(a) |
| Vapour pressure [50°C] | : Not applicable. |
| Density | : Not applicable |
| Vapour density | : Not applicable for gases and gas mixtures. |
| 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 | : Not applicable for gases and gas mixtures. |
| Particle characteristics | : Not applicable for gases and gas mixtures. |

9.2. Other information**9.2.1. Information with regard to physical hazard classes**

| | |
|---------------------------|----------------------------|
| Oxidising properties | : No oxidising properties. |
| Tci | : 3 % |
| Critical temperature [°C] | : 35 °C |

9.2.2. Other safety characteristics

| | |
|------------|----------------------|
| Molar mass | : 26 g/mol |
| Gas group | : Press. Gas (Diss.) |

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

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoidNone under recommended storage and handling conditions (see section 7).
Avoid moisture in installation systems.**10.5. Incompatible materials**

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 | : Toxicological effects not expected from this product if occupational exposure limit values are not exceeded. |
|----------------|--|

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| | |
|--|--|
| 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

Other information : The substance/mixture has no endocrine disrupting properties.

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

No additional information available

12.3. Bioaccumulative potential

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

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. |
|------------|---|

12.5. Results of PBT and vPvB assessment

| | |
|------------|----------------------------------|
| Assessment | : Not classified as PBT or vPvB. |
|------------|----------------------------------|

12.6. Endocrine disrupting properties

The substance/mixture has no endocrine disrupting properties.

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. |

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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

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.

| | | |
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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) : Covered.

National regulations

Ensure all national/local regulations are observed.

Germany

Water hazard class (WGK) : WGK nwg, Non-hazardous to water (Classification according to AwSV)
 National Rules and Recommendations : [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.

Netherlands


SZW-lijst van kankerverwekkende stoffen : The substance is not listed
 SZW-lijst van mutagene stoffen : The substance is not listed
 SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
 SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
 SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

Switzerland

Storage class (LK) : LK 2 - Liquefied or pressurized gases
 Chemicals Ordinance (SR 813.11) : Group 2

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15.2. Chemical safety assessment


A CSA has been carried out.

SECTION 16: Other information

| | |
|----------------------------|---|
| Indication of changes | : Safety data sheet in accordance with commission regulation (EU) No 2020/878. |
| 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 | |
|------------------------------------|---|
| Chem. Unst. Gas A | Chemically Unstable gases, Category A |
| Flam. Gas 1A | Flammable gases, Category 1A |
| 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. |
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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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| Identified Uses | Es N° | Short title | Page |
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| Formulation of mixtures in pressure receptacles | NOAL.00 1-1 | Industrial uses, closed contained conditions | 13 |
| Transfilling in pressure receptacles | NOAL.00 1-1 | Industrial uses, closed contained conditions | 13 |
| Calibration of analysis equipment | NOAL.00 1-1 | Industrial uses, closed contained conditions | 13 |
| Feedstock in chemical processes | NOAL.00 1-1 | Industrial uses, closed contained conditions | 13 |
| Fuel gas for welding, cutting, heating, brazing and soldering applications. | NOAL.00 1-1 | Industrial uses, closed contained conditions | 13 |
| Fuel gas for welding, cutting, heating, brazing and soldering applications. | NOAL.00 1-2 | Professional uses | 16 |

Exposure scenario

Acetylene (dissolved)

Annex to the safety data sheet
 Reference number: NOAL_0001
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

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

1.1. Title section

| | |
|---|--|
| Industrial uses, closed contained conditions | |
| ES Ref.: NOAL.001-1 Revision date: 5/26/2023 | |
| Processes, tasks, activities covered | Industrial uses, including product transfers and associated laboratory activities within different closed or contained systems |
| Environment | Use descriptors |
| CS1 | ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC7, ERC8d, ERC9a, ERC9b |
| Worker | Use descriptors |
| CS2 | PROC1, PROC2, PROC3, PROC8b, PROC9, PROC16 |
| 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, 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 |

Exposure scenario

Acetylene (dissolved)

Annex to the safety data sheet
 Reference number: NOAL_0001
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

Technical and organisational conditions and measures

| | |
|--|--|
| Ensure operatives are trained to minimise releases | |
|--|--|

Conditions and measures related to sewage treatment plant

| | |
|---|--|
| Wastewater emission controls are not applicable as there is no direct release to wastewater | |
|---|--|

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: 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. | |
|----------------------------------|--|

Exposure scenario

Acetylene (dissolved)

Annex to the safety data sheet
 Reference number: NOAL_0001
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

| | |
|---|--|
| 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, 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.

1.3.2. Worker exposure: PROC1, PROC2, PROC3, PROC8b, PROC9, PROC16

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 |
|-------------------|--|

Exposure scenario

Acetylene (dissolved)

Annex to the safety data sheet
 Reference number: NOAL_0001
 CAS-No.: 74-86-2 Product form: Substance Physical state: Gas

2. NOAL.001-2: Professional uses

2.1. Title section

Professional uses

ES Ref.: NOAL.001-2
 Revision date: 5/26/2023

Association ref code: EIGA001-2

| | |
|--------------------------------------|---|
| Processes, tasks, activities covered | Professional uses, including transfer of product in non-industrial settings |
|--------------------------------------|---|

| Environment | Use descriptors |
|-------------|-----------------|
|-------------|-----------------|

| | |
|-----|--------------|
| CS1 | ERC9a, ERC9b |
|-----|--------------|

| Worker | Use descriptors |
|--------|-----------------|
|--------|-----------------|

| | |
|-----|--------|
| CS2 | PROC16 |
|-----|--------|

| | |
|-------------------|----------------|
| Assessment method | ECETOC TRA 2.0 |
|-------------------|----------------|

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: 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)

| | |
|--|--|
| 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 | |
|--|--|

Conditions and measures related to sewage treatment plant

| | |
|---|--|
| Wastewater emission controls are not applicable as there is no direct release to wastewater | |
|---|--|

Exposure scenario

Acetylene (dissolved)

Annex to the safety data sheet
 Reference number: NOAL_0001
 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

2.2.2. Control of worker exposure: PROC16

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

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

Exposure scenario

Acetylene (dissolved)

Annex to the safety data sheet
Reference number: NOAL_0001

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

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: PROC16

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

2.4.2. Health

Guidance - Health

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

End of document