

SECTION 1: Identification

1.1. Product identifier

Product form	: Substance
Substance name	: Acetylene
CAS-No.	: 74-86-2
Product code	: CA-1001-05235
Formula	: C ₂ H ₂
Synonyms	: Ethyne / Acetylene, dissolved / Acetylene (liquefied) / Ethine

1.2. Recommended use and restrictions on use

Recommended use	: Welding and soldering products, flux products
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1.3. Supplier

Air Liquide Canada Inc.
1250, René Lévesque West Blvd. Suite 1700
H3B 5E6 Montreal, QC - Canada
T 1-800-817-7697
www.airliquide.ca

1.4. Emergency telephone number

Emergency number	: 514-878-1667
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SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

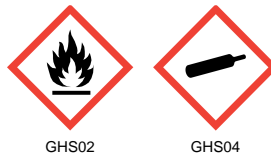
Classification (GHS-CA)

Flammable gases, Category 1 H220
Gases under pressure : Dissolved gas H280
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms (GHS-CA) :



Signal word (GHS-CA) :

Danger

Hazard statements (GHS-CA) :

H220 - EXTREMELY FLAMMABLE GAS
H231 - MAY REACT EXPLOSIVELY EVEN IN THE ABSENCE OF AIR AT ELEVATED PRESSURE AND/OR TEMPERATURE
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS-CA) :

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
P271+ P403 - Use and store only outdoors or in a well-ventilated area
P377 - Leaking gas fire: Do not extinguish unless leak can be stopped safely
P381 - In case of leakage, eliminate all ignition sources
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG13 - Fusible plugs in the top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F). Do not discharge at pressures above 15 psig (103 kPa)
CGA-PG06 - Close valve after each use and when empty
CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C/125°F
P304, P340, P313 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention

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according to the Hazardous Products Regulation (February 11, 2015)

2.3. Other hazards

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Chemical name/Synonyms	Product identifier	%	Classification (GHS-CA)
Acetylene (Main constituent)	Ethyne / Acetylene, dissolved / Acetylene (liquefied) / Ethine	(CAS-No.) 74-86-2	100	Flam. Gas 1, H220 Press. Gas (Diss.), H280

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after 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.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Adverse effects not expected from this product.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May displace oxygen and cause rapid suffocation.

Symptoms/effects after skin contact : Adverse effects not expected from this product.

Symptoms/effects after eye contact : Adverse effects not expected from this product.

Symptoms/effects after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/effects upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

Most important symptoms and effects, both acute and delayed : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of coordination.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media : Do not use water jet to extinguish. Carbon dioxide.

5.3. Specific hazards arising from the hazardous product

Fire hazard : This product is flammable.

Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form flammable/explosive vapour-air mixture.

Hazardous combustion products : Incomplete combustion may form carbon monoxide.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Exposure to fire may cause containers to rupture/explode.

Protection during firefighting : Standard protective clothing and equipment (e.g. Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

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- 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.
- Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus. Standard protective clothing and equipment (e.g. Self Contained Breathing Apparatus) for fire fighters. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Try to stop release. Evacuate area. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Eliminate ignition sources. Ensure adequate air ventilation.
- Personal Precautions, Protective Equipment and Emergency Procedures : EVACUATE ALL PERSONNEL FROM AFFECTED AREA. Use appropriate protective equipment. If leak is on user's equipment, be certain to purge piping before attempting repairs. If leak is on a container or container valve contact the closest Air Liquide Canada location.

6.2. Methods and materials for containment and cleaning up

- For containment : Try to stop release if without risk.
- Methods for cleaning up : Dispose of contents/container in accordance with local/regional/national/international regulations.
- Methods and material for containment and cleaning up : Ventilate area.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools.
- Hygiene measures : Do not eat, drink or smoke when using this product.
- Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. Handle empty containers with care because residual vapours are flammable. In use may form flammable vapour-air mixture.
- Safe use of the product : The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Avoid suck back of water, acid and alkalis. Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment. Purge air from system before introducing gas. Take precautionary measures against static discharge. Keep away from ignition sources (including static discharges). Consider the use of only non-sparking tools. Avoid contact with pure copper, mercury, silver and brass with greater than 65% copper. Do not use alloys containing more than 43% silver. Operating pressure in piping should be limited to 1.5 bar (gauge) or less due to more stringent national regulations (with maximum diameter DN25). Consider the use of flash back arrestors. Solvent may accumulate in piping systems. For maintenance use appropriate resistant gloves (specify for DMF or acetone), goggles. For further information on safe use refer to EIGA code of practice acetylene (EIGA Doc 123).
- 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.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Do not expose to temperatures exceeding 52 °C/ 125 °F. Keep container closed when not in use. Protect cylinders from physical damage; do not drag, roll, slide or drop. Store in well ventilated area.
Incompatible products	: None known.
Incompatible materials	: Oxidizing materials. Air.
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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Gas detectors should be used when flammable gases/vapours may be released. The substance is not classified for human health hazards or for environment effects and it is not PBT or vPvB so that no exposure assessment or risk characterisation is required. For tasks where the intervention of workers is required, the substance must be handled in accordance with good industrial hygiene and safety procedures. Consider the use of a work permit system e.g. for maintenance activities.
Environmental exposure controls	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Protective clothing. Safety shoes.

Hand protection:

Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk.

Eye protection:

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

Skin and body protection:

Wear suitable protective clothing, e.g. lab coats, coveralls or flame resistant clothing.

Respiratory protection:

None necessary.



Thermal hazard protection:

None necessary.

Other information:

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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
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Appearance	: Colorless, odorless gas.
Colour	: Colourless.
Odour	: Poor warning properties at low concentrations. Garlic like.
Odour threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable for gases and gas mixtures.
Molecular mass	: 26.04 g/mol
Melting point	: -80.8 °C
Freezing point	: -80.8 °C
Boiling point	: -83.75 °C
Flash point	: Not applicable for gases and gas mixtures.
Critical temperature	: 36.15 °C
Auto-ignition temperature	: 305 °C
Decomposition temperature	: 635 °C
Flammability (solid, gas)	: See Section 2.1 and 2.2
Vapour pressure	: 1999.4796141 mbar
Vapour pressure at 50 °C	: No data available
Critical pressure	: 6138 kPa
Relative vapour density at 20 °C	: 0.91
Relative density	: Not applicable.
Density	: 0.0012 g/cm ³ (at 0 °C)
Relative gas density	: 0.9
Solubility	: Water: 1185 mg/l
Log Pow	: 0.37
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidising properties	: None.
Explosive limits	: 2.3 - 100 vol %

9.2. Other information

Gas group : Press. Gas (Diss.)

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	: No reactivity hazard other than the effects described in sub-sections below.
Chemical stability	: Dissolved in a solvent supported in a porous mass. Stable under recommended handling and storage conditions (see section 7).
Possibility of hazardous reactions	: May react violently with oxidants. Can form explosive mixture with air. May react explosively even in the absence of air. May decompose violently at high temperature and/or pressure or in the presence of a catalyst.
Conditions to avoid	: Keep away from heat/sparks/open flames/hot surfaces. – No smoking. High temperature. High pressure.
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.
Hazardous decomposition products	: Under normal conditions of storage and use hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Inhalation:gas: Not classified.

Acetylene (f)74-86-2	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE CA (gases)	820000.00000000 ppmv/4h

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Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

Acetylene (74-86-2)	
Hydrocarbon	Yes

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No known ecological damage caused by this product.

Acetylene (74-86-2)	
LC50-96 h - fish [mg/l]	545 mg/l
EC50 48h - Daphnia magna [mg/l]	242 mg/l
EC50 72h Algae [mg/l]	57 mg/l

12.2. Persistence and degradability

Acetylene (74-86-2)	
Persistence and degradability	Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.

12.3. Bioaccumulative potential

Acetylene (74-86-2)	
Log Pow	0.37
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Acetylene (74-86-2)	
Log Pow	0.37
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Effect on global warming : No known effects from this product.
Effect on ozone layer : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Avoid discharge to atmosphere. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods.

Product/Packaging disposal recommendations : Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at www.cganet.com for more guidance on suitable disposal methods.

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).

List of hazardous wastes : 16 05 04 *: Gases in pressure containers (including halons) containing dangerous substances.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

UN-No. (TDG) : UN1001

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TDG Primary Hazard Classes : 2.1 - Class 2.1 - Flammable Gas.
Transport Document Description : UN1001 ACETYLENE, DISSOLVED, 2.1
Proper Shipping Name : ACETYLENE, DISSOLVED

Hazard labels (TDG) : 2.1 - Flammable gases



TDG Special Provisions : 38 - A person must not handle, offer for transport or transport these dangerous goods in a large means of containment if they are in direct contact with the large means of containment.
SOR/2014-306

Explosive Limit and Limited Quantity Index : 0
Passenger Carrying Ship Index : 75 kg
Excepted quantities (TDG) : E0
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : Forbidden

14.2. Transport information/DOT - USA

Department of Transport

DOT NA no. : UN1001
UN-No.(DOT) : 1001
Transport Document Description : UN1001 Acetylene, dissolved, 2.1
Proper Shipping Name (DOT) : Acetylene, dissolved
Contains Statement Field Selection (DOT) : DOT_TECHNICAL - Proper Shipping Name - Technical (DOT)

Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Division (DOT) : 2.1
Hazard labels (DOT) : 2.1 - Flammable gas



Dangerous for the environment : No

DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized.
N88 - Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.

DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Packaging Non Bulk (49 CFR 173.xxx) : 303
DOT Packaging Bulk (49 CFR 173.xxx) : None
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 15 kg

DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 25 - Shade from radiant heat,40 - Stow "clear of living quarters",57 - Stow "separated from" chlorine

Emergency Response Guide (ERG) Number : 116 (UN1001)

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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.
Other information	: No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG)	: 1001
Transport Document Description (IMDG)	: UN 1001 , 2
Class (IMDG)	: 2 - Gases
MFAG-No	: 116
Ship Safety Act	: Gases under pressure/Gases flammable under pressure(Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)
Port Regulation Law	: Hazardous materials/High pressure gas (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods)

IATA

UN-No. (IATA)	: 1001
Transport Document Description (IATA)	: UN 1001 , 2
Class (IATA)	: 2
Civil Aeronautics Law	: Gases under pressure/Gases flammable under pressure(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

SECTION 15: Regulatory information

15.1. National regulations

Acetylene (74-86-2)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Acetylene (74-86-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

SECTION 16: Other information

Date of issue	: 05/08/2017
Training advice	: Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training.
Other information	: This Safety Data Sheet has been established in accordance with the applicable European Union legislation.

Full text of H-statements:

H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

SDS Canada (GHS)

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