



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

1.1. Product identifier

Trade name : Vinylacetylene
Chemical description : Vinylacetylene

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

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use
Test gas/Calibration gas
Laboratory use
Contact supplier for more information on uses

Uses advised against :

1.3. Details of the supplier of the safety data sheet

Company identification : Air Liquide UK Ltd.
Station Road, Coleshill
B46 1JY Birmingham United Kingdom
01675462424
E-Mail address (competent person) : genenq.aluk@airliquide.com

1.4. Emergency telephone number

Emergency number : 01675 462695

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 2	H221
	Gases under pressure : Compressed gas	H280
Health hazards	Acute toxicity (inhalation:gas) Category 3	H331
	Skin corrosion/irritation, Category 2	H315
	Serious eye damage/eye irritation, Category 1	H318
Environmental hazards	Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F+; R12
R5
R6

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS04

GHS05

GHS06

GHS09

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H221 - Flammable gas
 H280 - Contains gas under pressure; may explode if heated
 H315 - Causes skin irritation
 H318 - Causes serious eye damage
 H331 - Toxic if inhaled
 H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

- Prevention : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
 P264 - Wash ... thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P273 - Avoid release to the environment
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Response : P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P321 - Specific treatment (see ... on this label)
 P332+P313 - If skin irritation occurs: Get medical advice/attention
 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
 P381 - Eliminate all ignition sources if safe to do so
 P391 - Collect spillage
 P362+P364 - Take off contaminated clothing and wash it before reuse
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P310 - Immediately call a POISON CENTER/doctor/...
 P302+P352 - IF ON SKIN: Wash with plenty of water/...
- Storage : P403 - Store in a well-ventilated place
 P403+P233 - Store in a well-ventilated place. Keep container tightly closed
 P405 - Store locked up
 P410+P403 - Protect from sunlight. Store in a well-ventilated place
- Disposal considerations : P501 - Dispose of contents/container to ...

2.3. Other hazards

: None

SECTION 3: Composition/information on ingredients
3.1. Substance

Name : Vinylacetylene

Name	Product identifier	%	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No. 1272/2008 [CLP]
BUTENYNE, Vinyl acetylene	(CAS No) 689-97-4 (EC no) 211-713-3	100	F+; R12 R5 R6	Flam. Gas 2, H221 Compressed gas, H280 Acute Tox. 3 (Inhalation:gas), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 1, H410

Full text of R- and H-statements: see section 16

3.2. Mixture

: Not applicable

SECTION 4: First aid measures**4.1. Description of first aid measures**

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped
- Skin contact : For liquid spillage - flush with water for at least 15 minutes
- Eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes
- 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
Refer to section 11

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

- : None

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

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

5.2. Special hazards arising from the substance or mixture

- Specific hazards : Exposure to fire may cause containers to rupture/explode
- Hazardous combustion products : Incomplete combustion may form carbon monoxide

5.3. Advice for fire-fighters

- 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
- 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 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**

- : Try to stop release
Evacuate area
Consider the risk of potentially explosive atmospheres
Eliminate ignition sources
Ensure adequate air ventilation

6.2. Environmental precautions

- : Try to stop release

6.3. Methods and material for containment and cleaning up

: Ventilate area

6.4. Reference to other sections

: See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product

: The substance 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
Protect eyes, face and skin from liquid splashes
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt
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.

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
Containers should be stored in the vertical position and properly secured to prevent them from falling over.

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

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

: Provide adequate general and local exhaust ventilation
Systems under pressure should be regularly checked for leakages
Ensure exposure is below occupational exposure limits (where available)
Keep concentrations well below lower explosion limits
Gas detectors should be used when flammable gases/vapours may be released
Consider 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
Wear goggles and a face shield when transfilling or breaking transfer connections
Standard EN 166 - Personal eye-protection

• Skin protection

- Hand protection

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

- Other

: Consider the use of flame resistant anti-static safety clothing
Standard EN ISO 14116 - Limited flame spread materials
Standard EN ISO 1149-5 - Protective clothing: Electrostatic properties
Wear safety shoes while handling containers
Standard EN ISO 20345 - Personal protective equipment - Safety footwear

• Respiratory protection

: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask

• Thermal hazards

: Wear cold insulating gloves when transfilling or breaking transfer connections
Standard EN 511 - Cold insulating gloves

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 : Odour threshold is subjective and inadequate to warn of overexposure.

pH value : Not applicable for gas-mixtures.

Molar mass : Not applicable for gas-mixtures.

Melting point : Not applicable for gas-mixtures.

Boiling point : Not applicable for gas-mixtures.

Critical temperature [°C] :

Flash point : Not applicable for gas-mixtures.

Evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Flammability range	: Not applicable for gas-mixtures.
Vapour pressure [20°C]	: Not applicable.
Vapour pressure [50°C]	:
Relative density, gas (air=1)	: Lighter or similar to air.
Relative density, liquid (water=1)	:
Partition coefficient n-octanol/water [log Kow]	: Not applicable for gas-mixtures.
Auto-ignition temperature	:
Viscosity [20°C]	: Not applicable.
Explosive Properties	: Not applicable
Oxidising Properties	: None
- Coefficient of oxygen equivalency (Ci)	:

9.2. Other information

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

: Stable under normal conditions

10.3. Possibility of hazardous reactions

: Can form explosive mixture with air
May react violently with oxidants

10.4. Conditions to avoid

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

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 toxicological effects

Acute toxicity : No toxicological effects from this product

BUTENYNE, Vinyl acetylene (689-97-4)

LC50 inhalation rat (mg/l)	97200 ml/m ³
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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

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

Assessment : Classification criteria are not met.

12.2. Persistence and degradability**Vinylacetylene**

Assessment : No data available.

12.3. Bioaccumulative potential**Vinylacetylene**

Log Kow : Not applicable for gas-mixtures.

Assessment : No data available.

12.4. Mobility in soil**Vinylacetylene**

Mobility in soil : No data available.

12.5. Results of PBT and vPvB assessment

Assessment : No data available

12.6. Other adverse effects

Effect on the ozone layer : None

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

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 16 05 04: Gases in pressure containers (including halons) containing dangerous substances

13.2. Additional information

: None

SECTION 14: Transport information**14.1. UN number**

UN-No. : 1954

14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : COMPRESSED GAS, FLAMMABLE, N.O.S. (BUTENYNE, Vinyl acetylene)

Transport by air (ICAO-TI / IATA-DGR) : Compressed gas, flammable, n.o.s. (BUTENYNE, Vinyl acetylene)

Transport by sea (IMDG) : COMPRESSED GAS, FLAMMABLE, N.O.S. (BUTENYNE, Vinyl acetylene)

14.3. Transport hazard class(es)

Labelling


2.1 : Flammable gases

Transport by road/rail (ADR/RID)

Class : 2
 Classification code : 1F
 Hazard identification number : 23
 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 applicable
 Transport by air (ICAO-TI / IATA-DGR) : Not applicable
 Transport by sea (IMDG) : Not applicable

14.5. Environmental hazards

Transport by road/rail (ADR/RID) : Environmentally hazardous substance / mixture.
 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 cylinder valve is closed and not leaking
 - Ensure valve outlet cap nut or plug (where provided) is correctly fitted
 - Ensure valve protection device (where provided) is correctly fitted.

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

: Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU-Regulations

Seveso directive 96/82/EC : Covered

National regulations

National legislation : Ensure all national/local regulations are observed.

Water hazard class (WGK) : -

15.2. Chemical safety assessment

: A CSA does not need to be carried out for this product

SECTION 16: Other information

Indication of changes : Revised safety data sheet in accordance with commission regulation (EU) No 2015/830.

Training advice : Ensure operators understand the flammability hazard. Receptacle under pressure.

Other information : This Safety Data Sheet has been established in accordance with the applicable European Union legislation. Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD.

Full text of R-, H- and EUH-statements

Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Compressed gas	Gases under pressure : Compressed gas
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Gas 2	Flammable gases, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H221	Flammable gas
H280	Contains gas under pressure; may explode if heated
H315	Causes skin irritation
H318	Causes serious eye damage
H331	Toxic if inhaled
H410	Very toxic to aquatic life with long lasting effects
R12	Extremely flammable
R5	Heating may cause an explosion
R6	Explosive with or without contact with air
F+	Extremely flammable

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