

Section 1 – Product and Company Identification

- 1.1 GHS Product Identifier** : 2-Butyne
Other means of identification : Crotonylene; Dimethylacetylene.
- Product Number** : 315200
Chemical Formula : C⁴H⁶
CAS Number : 503-17-3
EC Number : 207-962-2
- 1.2 Recommended use** : Laboratory chemicals, Manufacture of substances
- 1.3 Supplier's detail** : Wiley Companies
1245 South 6th Street
Coshocton, Ohio 43812.
(740) 622-0755.
- 1.4 Emergency Telephone number** : (800) 633-8253.
International number : (801) 629-0667.

Section 2 – Hazards Identification

- 2.1 GHS Classification of the substance or mixture**
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 1)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity – single exposure (Category 3) Respiratory system
- 2.2 GHS Label elements, including precautionary statements**
Pictogram



Signal word

Danger

Hazard statement(s)

H224

Extremely flammable liquid and vapour.

H315

Causes skin irritation.

H319 Causes serious eye irritation.
H335 May cause respiratory irritation

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P362 Take off contaminated clothing.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/container to an approved waste disposal plant

2.3 Hazards not otherwise classified or not covered by GHS

None

Section 3 - Composition / Information on Ingredients**Substance/Mixture**

Chemical name : 2-Butyne
Synonyms : Crotonylene
Dimethylacetylene.
Formula : C⁴H⁶
CAS number : 503-17-3
EC number : 207-962-2

Hazardous components

Component	Classification	Concentration
2-Butyne	Flammable Liquid (Category 1) Skin Irritant (Category 2) Eye Irritant (Category 2A) STOT SE (Category 3) Respiratory system	98%

Section 4 - First Aid Measures
4.1 Description of necessary first aid measures
If inhaled

Remove person to fresh air. Consult a physician if necessary.
If breathing is stopped, administer artificial respiration if trained to do so.

In case of skin contact

Flush with copious amounts of water for at least 15 minutes. Consult a physician if necessary.

In case of eye contact

Flush with copious amounts of water for at least 15 minutes. Consult a physician if necessary.

If ingested

Do NOT induce vomiting.
Rinse mouth out with water.
Never give liquid to an unconscious person.
Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling section 2.2.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available.

Section 5 – Fire Fighting Measure
5.1 Extinguishing media
Suitable extinguishing media

Water spray
Alcohol resistant foam
Carbon dioxide

Dry chemical.

Unsuitable extinguishing media

None known.

5.2 Specific hazards arising from the chemical

Carbon oxides.

5.3 Special protective equipment for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH for firefighters (approved or equivalent) and full protective gear.

5.4 Special precautions for fire fighters

Cool vessels and containers with sprayed water. Containers may explode when heated. Vapours can accumulate in low areas. Evacuate all personnel from the danger area. Remove ignition sources if safe to do so. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product release point.

Section 6 – Accidental Release Measures**6.1 Personal precautions, protective equipment and emergency procedures.**

Use personal protective equipment. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Avoid breathing vapours, mist or gas. Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Evacuate personnel to safe areas. Prevent contamination of soil, drains and surface water. Take up residue with absorbent material and dispose of in accordance with all local, state and federal regulations.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and materials for containment and cleaning up

Utilize non-sparking tools. For large spills, dike far ahead of liquid spill for later disposal. Cover liquid spill with sand, earth or other non-combustible absorbent material. Collect with an electrically protected vacuum cleaner

Section 7 – Handling and Storage**7.1 Precautions for safe handling**

Wear all appropriate personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from source of ignition. Use only non-sparking tools. Use only

explosion-proof equipment. Take measures to prevent buildup of electrostatic charge. Keep containers tightly closed when not in use

7.2 Conditions for safe storage, including any incompatibilities

Store material in D.O.T. approved containers.

Follow all applicable local, state, and federal regulations.

Section 8 – Exposure Controls / Personal Protection

8.1 Control parameters

Occupational exposure limits

Contains no substances with occupational exposure limit values.

8.2 Appropriate engineering controls

Engineering Controls:

Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area. Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs.

8.3 Individual protection measures

Administrative Controls:

Handle in accordance with good industrial hygiene and safety practice. When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Wear protective eyeglasses or chemical safety goggles, per OSHA eye and face protection regulations (29 CFR 1910.133). Wear chemically protective gloves. Wear a chemically protective suit. Wear flame retardant protective clothing.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance : Clear, colourless liquid.

Odour : No data available.

Odour Threshold : No data available.

pH	: No data available.
Melting point/freezing point	: -32 °C (-26 °F) - lit.
Initial boiling point and boiling point range	: 27 °C (81 °F) - lit.
Flash point	: -25 °C (-13 °F) - closed cup
Evaporation rate	: No data available.
Flammability (solid, gas)	: No data available.
Upper/lower flammability or explosive limits	: Lower flammability limit: 1.4% Upper flammability limit:
Vapour pressure	: 790.6 hPa (593.0 mmHg) at 20 °C (68 °F)
Vapour density	: 1.86 (Air = 1) – lit.
Relative density	: 0.691 g/cm ³ at 25 °C (77 °F) – lit.
Water solubility	: No data available.
Partition coefficient: n-octanol/water	: No data available.
Auto-ignition Temperature	: No data available.
Decomposition Temperature	: No data available.
Viscosity	: No data available.
Molecular weight	: No data available.

Section 10 – Stability and Reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

This material is stable at room temperature in closed containers under normal storage and handling conditions.

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture in air.

10.4 Conditions to avoid

Heat, flames and other sources of ignition.

10.5 Incompatible materials

Strong oxidizing agents. Copper alloys > 65%. Silver

10.6 Hazardous decomposition products

Carbon oxides.

Section 11 – Toxicological Information**11.1 Information on toxicological effects****Acute toxicity**

No data available.

Skin corrosion/irritation

No data available.

Serious eye damage/eye irritation

No data available.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available.

Specific target organ toxicity – single exposure

Inhalation – may cause respiratory irritation.

Specific target organ toxicity – repeated exposure

No data available.

Aspiration hazard

No data available.

Information on the likely routes of exposure

No data available.

Symptoms related to the physical, chemical and toxicological characteristics

No data available.

Delayed and immediate effects and also chronic effects from short and long-term exposure

No data available.

Numeric measures of toxicity

No data available.

Section 12 – Ecological Information**12.1 Toxicity**

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Other adverse effects

No data available.

Section 13 – Disposal Considerations**13.1 Disposal Methods**

Follow all applicable local, state, and federal regulations.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 – Transport Information

	DOT	IMDG	IATA
UN number	UN1144	UN1144	UN1144
Un proper shipping name	Crotonylene	CROTONYLENE	Crotonylene
Transport hazard class	3	3	3
Packing group	I	I	I
Marine pollutant	No	No	-

Section 15 – Regulatory Information**SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire hazard, acute health hazard.

Section 16 – Other Information

	HMIS		NFPA
Health - Chronic			
Health Hazard	2	Health Hazard	2
Flammability	4	Fire Hazard	4
Physical	0	Reactivity	0

Prepared By:

 Wiley Companies
 The EH&S Department

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