

Vinyl chloride

Safety Data Sheet 1300505

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/02/2015

Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Substance
 Substance name : Vinyl chloride
 CAS No : 75-01-4
 Product code : 1300-5-05
 Formula : C₂H₃Cl
 Synonyms : 1-Chloroethene; 1-Chloroethylene; Chloroethene; Chloroethylene
 Other means of identification : MFCD00040415

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

Use of the substance/mixture : Laboratory chemicals
 Manufacture of substances
 Scientific research and development

1.3. Details of the supplier of the safety data sheet

SynQuest Laboratories, Inc.
 P.O. Box 309
 Alachua, FL 32615 - United States of America
 T (386) 462-0788 - F (386) 462-7097
info@synquestlabs.com - www.synquestlabs.com

1.4. Emergency telephone number

Emergency number : (844) 523-4086 (3E Company - Account 10069)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Simple Asphy H380 - May displace oxygen and cause rapid suffocation
 Flam. Gas 1 H220 - Extremely flammable gas
 Compressed gas H280 - Contains gas under pressure; may explode if heated
 Carc. 1A H350 - May cause cancer

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H220 - Extremely flammable gas
 H280 - Contains gas under pressure; may explode if heated
 H350 - May cause cancer
 H380 - May displace oxygen and cause rapid suffocation

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P308+P313 - If exposed or concerned: 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
 P403 - Store in a well-ventilated place
 P405 - Store locked up
 P410+P403 - Protect from sunlight. Store in a well-ventilated place
 P501 - Dispose of contents/container to an approved waste disposal plant

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2.3. Other hazards

Other hazards not contributing to the classification : May cause frostbite.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	%	Classification (GHS-US)
Vinyl chloride (Main constituent)	(CAS No) 75-01-4	<= 100	Simple Asphy, H380 Flam. Gas 1, H220 Compressed gas, H280 Carc. 1A, H350

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Move the affected personnel away from the contaminated area.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Get immediate medical advice/attention.
- First-aid measures after skin contact : Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.
- First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. Immediately flush eyes thoroughly with water for at least 15 minutes.
- First-aid measures after ingestion : Due to its physical form, exposure to this chemical is not likely. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.
- Symptoms/injuries after skin contact : Contact with the liquid may cause cold burns/frostbite.
- Symptoms/injuries after eye contact : Direct contact with the liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Thermal decomposition generates: Carbon oxides. Hydrogen chloride.
- Explosion hazard : Contains gas under pressure; may explode if heated. Use water spray or fog for cooling exposed containers.

5.3. Advice for firefighters

- Protection during firefighting : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate unnecessary personnel. Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level. Ensure adequate air ventilation. Do not breathe gas, fumes, vapor or spray. May cause suffocation by reducing oxygen available for breathing. Gas/vapor explosive with air within explosion limits. Eliminate every possible source of ignition.

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6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Do not breathe fumes, gas, mist, spray, vapors. Wear personal protective equipment. Avoid contact with skin and eyes. Keep away from ignition sources (including static discharges).

Safe handling of the gas receptacle : Contents under pressure. Ensure cylinder valve is closed and not leaking after each use.

Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Securely chain cylinders when in use and protect against physical damage. Ground/bond container and receiving equipment.

Storage conditions : Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

Incompatible materials : Refer to Section 10 on Incompatible Materials.

Storage area : Store in dry, cool, well-ventilated area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Vinyl chloride (75-01-4)		
ACGIH	ACGIH TWA (ppm)	1 ppm
OSHA	OSHA PEL (TWA) (ppm)	1 ppm
OSHA	OSHA PEL (STEL) (ppm)	5 ppm (see 29 CFR 1910.1017)

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection : Protective gloves.

Eye protection : Chemical goggles or safety glasses. Face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Colorless gas at ordinary temperature. Colorless liquid below -14 °C (7 °F).

Color : Colorless

Odor : mild Sweet

Odor threshold : No data available

pH : No data available

Melting point : -153.7 °C

Freezing point : No data available

Boiling point : -13.8 °C

Flash point : -78 °C (open cup)

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Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: 3330 hPa (at 20 °C)
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 0.911 g/cm ³ (at 20 °C)
Solubility	: Water: 1.1 g/l (at 20 °C)
Log Pow	: 1.58 (at 22 °C)
Auto-ignition temperature	: 472.22 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions. Stabilized product: Hydroquinone.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Exclude sources of heat, sparks and open flame. Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

10.5. Incompatible materials

Oxidizing agents. Copper.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products in case of fire, see Section 5.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Vinyl chloride (75-01-4)	
LD50 oral rat	500 mg/kg
LC50 inhalation rat (mg/l)	18 lb/h (Exposure time: 15 min)
ATE US (oral)	500.000 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.

Vinyl chloride (75-01-4)	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens
In OSHA Hazard Communication Carcinogen list	Yes
In OSHA Specifically Regulated Carcinogen list	Yes

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Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after skin contact	: Contact with the liquid the may cause cold burns/frostbite.
Symptoms/injuries after eye contact	: Direct contact with the liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation.

SECTION 12: Ecological information

12.1. Toxicity

Vinyl chloride (75-01-4)	
LC50 fish 1	210 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Vinyl chloride (75-01-4)	
BCF fish 1	(no significant bioaccumulation)
Log Pow	1.58 (at 22 °C)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII. U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring. U.S. - RCRA (Resource Conservation & Recovery Act) - D Series Wastes - Max Conc of Contaminants for the Tox Characteristic. U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261. U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents. U.S. - RCRA (Resource Conservation & Recovery Act) - Part 268 Appendix III - Halogenated Organic Compounds (HOCs). U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards. U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring. U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics.
Waste treatment methods	: Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.
Waste disposal recommendations	: Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN1086 Vinyl chloride, stabilized, 2.1
UN-No.(DOT)	: UN1086
Proper Shipping Name (DOT)	: Vinyl chloride, stabilized
Transport hazard class(es) (DOT)	: 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Hazard labels (DOT)	: 2.1 - Flammable gas



DOT Packaging Non Bulk (49 CFR 173.xxx)	: 304
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DOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
DOT Special Provisions (49 CFR 172.102)	: 21 - This material must be stabilized by appropriate means (e.g., addition of chemical inhibitor, purging to remove oxygen) to prevent dangerous polymerization (see 173.21(f) of this subchapter). B44 - All parts of valves and safety relief devices in contact with lading must be of a material which will not cause formation of acetylides. N86 - UN pressure receptacles made of aluminum alloy are not authorized. T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 306
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 150 kg
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" 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; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
Emergency Response Guide (ERG) Number	: 116P
Other information	: No supplementary information available.

TDG

No additional information available

Transport by sea

UN-No. (IMDG)	: 1086
Proper Shipping Name (IMDG)	: VINYL CHLORIDE, STABILIZED
Class (IMDG)	: 2 - Gases

Air transport

UN-No. (IATA)	: 1086
Proper Shipping Name (IATA)	: Vinyl chloride, stabilized
Class (IATA)	: 2

SECTION 15: Regulatory information

15.1. US Federal regulations

Vinyl chloride (75-01-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting	0.1 %
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All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Vinyl chloride	CAS No 75-01-4	100%
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15.2. International regulations

CANADA

Vinyl chloride (75-01-4)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class F - Dangerously Reactive Material
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EU-Regulations

No additional information available

National regulations

Vinyl chloride (75-01-4)
Listed on IARC (International Agency for Research on Cancer) 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 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) Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed as carcinogen on NTP (National Toxicology Program) Listed on the Canadian IDL (Ingredient Disclosure List) Listed on INSQ (Mexican national Inventory of Chemical Substances) Listed on Turkish inventory of chemical

15.3. US State regulations

Vinyl chloride (75-01-4)	
U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
No significant risk level (NSRL)	3 µg/day
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances U.S. - Pennsylvania - RTK (Right to Know) List

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity

SECTION 16: Other information

Full text of H-phrases:

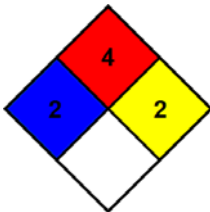
Carc. 1A	Carcinogenicity Category 1A
Compressed gas	Gases under pressure Compressed gas
Flam. Gas 1	Flammable gases Category 1
Simple Asphy	Simple Asphyxiant
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H350	May cause cancer
H380	May displace oxygen and cause rapid suffocation

NFPA health hazard

NFPA fire hazard

NFPA reactivity

- : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
- : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.
- : 2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.



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HMIS III Rating	
Health	: 2 Moderate Hazard - Temporary or minor injury may occur * - Chronic (long-term) health effects may result from repeated overexposure
Flammability	: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)
Physical	: 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

SDS US (GHS HazCom 2012)

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