

SECTION 1: Identification

1.1. Identification

| | |
|-------------------------------|--|
| Product form | : Substance |
| Substance name | : Propene |
| CAS No | : 115-07-1 |
| Product code | : 1300-1-02 |
| Formula | : C ₃ H ₆ |
| Synonyms | : Propylene / 1-Propene / n-Propene / 1-Propylene / Prop-1-ene |
| Other means of identification | : MFCD00009279 |

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
Liquefied gas H280 - Contains gas under pressure; may explode if heated

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02

GHS04

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

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

Precautionary statements (GHS-US) :

P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
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
P410+P403 - Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

Other hazards not contributing to the classification

: Heating may cause violent combustion or explosion. May cause frostbite. Risk of explosion if heated under confinement.

2.4. Unknown acute toxicity (GHS US)

Not applicable

Propene

Safety Data Sheet

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

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent

| Name | Product identifier | % | Classification (GHS-US) |
|-------------------------------|--------------------|--------|--|
| Propene (Main constituent) | (CAS No) 115-07-1 | <= 100 | Simple Asphy, H380 Flam. Gas 1, H220 Liquefied gas, H280 |

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 : Wash with plenty of soap and water. Get medical advice/attention.
- First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Immediately flush eyes thoroughly with water for at least 15 minutes. Get medical advice/attention.
- 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 inhalation : May cause drowsiness or dizziness.
- 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.

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.
- Explosion hazard : Contains gas under pressure; may explode if heated. Use water spray or fog for cooling exposed containers. May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.
- 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. Ensure adequate air ventilation. May cause suffocation by reducing oxygen available for breathing. Do not breathe gas, fumes, vapor or spray.

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".

Propene

Safety Data Sheet

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

Emergency procedures : Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level. Consider the risk of potentially explosive atmospheres. Eliminate every possible source of ignition.

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.
Methods for cleaning up : Ventilate area.
Other information : For disposal of solid materials or residues refer to section 13 : "Disposal considerations".

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Handle empty containers with care because residual vapors are flammable. Close valve after each use and when empty.
Precautions for safe handling : Do not handle until all safety precautions have been read and understood. 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). Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools.
Safe handling of the gas receptacle : Securely chain cylinders when in use and protect against physical damage.
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 : Comply with applicable regulations.
Storage conditions : Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Keep container closed when not in use. Keep away from ignition sources.
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

| Propene (115-07-1) | | |
|--------------------|-----------------|-------------------|
| ACGIH | ACGIH TWA (ppm) | 500 ppm |
| ACGIH | Remark (ACGIH) | Asphyxia; URT irr |

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. Systems under pressure should be regularly checked for leakage. Oxygen detectors should be used when asphyxiating gases may be released.
Hand protection : Protective gloves. 29 CFR 1910.138: Hand Protection.
Eye protection : Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : In case of inadequate ventilation wear respiratory protection. 29 CFR 1910.134: Respiratory Protection.
Thermal hazard protection : Cold insulating gloves.
Other information : Safety shoes. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas
Appearance : Colorless gas.
Color : Colorless
Odor : mild

Propene

Safety Data Sheet

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

| | |
|---|---------------------------------------|
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : -185 °C |
| Freezing point | : No data available |
| Boiling point | : -48 - -46 °C |
| Flash point | : -108 °C |
| 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 | : 10201 hPa (at 20 °C) |
| Relative density | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Specific gravity / density | : 0.5139 g/cm ³ (at 20 °C) |
| Molecular mass | : 42.0797 g/mol |
| Solubility | : Water: 200 mg/l (at 25 °C) |
| Log Pow | : <= 2.8 |
| Auto-ignition temperature | : 455 °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.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Keep away from heat, sparks and flame.

10.5. Incompatible materials

Strong acids. Strong oxidizing agents.

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 : Inhalation:gas: Not classified.

Propene (115-07-1)

| | |
|---------------------------|----------------|
| LC50 inhalation rat (ppm) | > 65000 ppm/4h |
|---------------------------|----------------|

| | |
|-----------------------------------|------------------|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

Propene

Safety Data Sheet

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

| Propene (115-07-1) | |
|--|--|
| IARC group | 3 - Not classifiable |
| 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 inhalation | : May cause drowsiness or dizziness. |
| 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

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

| Propene (115-07-1) | |
|--------------------|--------|
| Log Pow | <= 2.8 |

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

| | |
|--------------------------------|---|
| 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. |
| Additional information | : Recycle the material as far as possible. |

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1077 Propylene (see also Petroleum gases, liquefied), 2.1

UN-No.(DOT) : UN1077

Proper Shipping Name (DOT) : Propylene
see also Petroleum gases, liquefied

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

DOT Packaging Bulk (49 CFR 173.xxx) : 314;315

Propene

Safety Data Sheet

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

| | |
|--|--|
| DOT Special Provisions (49 CFR 172.102) | : 19 - For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information. 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 | : E - 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, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded. |
| DOT Vessel Stowage Other | : 40 - Stow "clear of living quarters" |
| Emergency Response Guide (ERG) Number | : 115 (UN1075) |
| Other information | : No supplementary information available. |

TDG

No additional information available

Transport by sea

| | |
|-----------------------------|-------------|
| UN-No. (IMDG) | : 1077 |
| Proper Shipping Name (IMDG) | : PROPYLENE |
| Class (IMDG) | : 2 - Gases |

Air transport

| | |
|-----------------------------|-------------|
| UN-No. (IATA) | : 1077 |
| Proper Shipping Name (IATA) | : Propylene |
| Class (IATA) | : 2 |

SECTION 15: Regulatory information

15.1. US Federal regulations

Propene (115-07-1)

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 | 1.0 % |
|---------------------------------------|-------|

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.

| | | |
|---------|-----------------|------|
| Propene | CAS No 115-07-1 | 100% |
|---------|-----------------|------|

15.2. International regulations

CANADA

Propene (115-07-1)

Listed on the Canadian DSL (Domestic Substances List)

| | |
|----------------------|--|
| WHMIS Classification | Class A - Compressed Gas Class B Division 1 - Flammable Gas |
|----------------------|--|

EU-Regulations

No additional information available

Propene

Safety Data Sheet

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

National regulations

Propene (115-07-1)

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 Japanese ISHL (Industrial Safety and Health Law)
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 INSQ (Mexican national Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Propene (115-07-1)

| | |
|----------------------------|--|
| 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) List |
|----------------------------|--|

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

SECTION 16: Other information

Full text of H-phrases:

| | |
|---------------|--|
| Flam. Gas 1 | Flammable gases Category 1 |
| Liquefied gas | Gases under pressure Liquefied gas |
| Simple Asphy | Simple Asphyxiant |
| H220 | Extremely flammable gas |
| H280 | Contains gas under pressure; may explode if heated |
| H380 | May displace oxygen and cause rapid suffocation |

NFPA health hazard

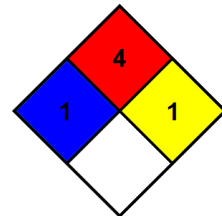
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

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

: 3 Serious Hazard - Materials that may form explosive mixtures with water and are capable of detonation or explosive reaction in the presence of a strong initiating source. Materials may polymerize, decompose, self-react, or undergo other chemical change at normal temperature and pressure with moderate risk of explosion

SDS US (GHS HazCom 2012)

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is offered solely for your consideration, investigation, and verification. It does not represent any guarantee of the properties of the product nor that the hazard precautions or procedures described are the only ones which exist. SynQuest shall not be held liable or any damage resulting from handling or from contact with the above product.