

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

1.1. Product identifier

| | |
|---------------|---------------------------|
| Product form | : Substance |
| Trade name | : Polymer Grade Propylene |
| Chemical name | : propene, propylene |
| CAS No | : 115-07-1 |
| Formula | : C3H6 |
| Product code | : P048 |

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

| | |
|------------------------------|---|
| Use of the substance/mixture | : Use as an intermediate Distribution Formulation Polymer production Use as a fuel Use as a propellant Fuel additives |
|------------------------------|---|

1.3. Details of the supplier of the safety data sheet

Braskem America, Inc
1735 Market Street
Philadelphia, PA 19103-7583
TEL: (800) 396 -5252

1.4. Emergency telephone number

| | |
|------------------|--|
| Emergency number | : 1 800-424-9300 Chemtrec (Outside USA) +1 703-527-3887 |
|------------------|--|

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Simple H380
Asphy
Flam. Gas 1 H220
Compressed H280
gas

Full text of H statements: see section 16

2.2. Label elements

GHS-US labelling

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
H380 - May displace oxygen and cause rapid suffocation

Precautionary statements (GHS-US)

: P210 - Keep away from heat, sparks, open flames, hot surfaces, No smoking. - 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 which do not result in classification

: When mixed with air and exposed to ignition source, can burn in open air or explode if confined. This material can accumulate static charge by flow or agitation and can be ignited by static discharge. May cause frostbite. May explode on heating.

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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 | % | GHS-US classification |
|--|--------------------|------|---|
| propene, propylene (Main constituent) | (CAS No) 115-07-1 | 99.5 | Simple Asphy, H380 Flam. Gas 1, H220 Compressed gas, H280 |

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

4.1. Description of first aid measures

- First-aid measures general : Do not rub the skin and eyes after direct contact with the product. Avoid any direct contact with the product. Seek medical advice.
- First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. If not breathing, give artificial respiration. Keep victim warm and rested. Seek medical attention immediately.
- First-aid measures after skin contact : May cause frostbite. DO NOT attempt to remove the frozen clothing from the skin since removal could result in severe tissue damage. Clothing frozen to the skin should be thawed before being removed. Thaw frosted parts with lukewarm water. Do not rub affected area. Remove the victim away from contaminated area. Put victim at rest, cover with a blanket and keep warm. Remove clothing and jewellery that can restrict circulation. Seek medical attention immediately.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Ensure adequate flushing of eyes by separating eyelids with the fingers. If eyelids are bonded closed release eyelashes with warm water by covering the eye with a wet pad. Do not force eyelids open. Seek medical attention immediately.

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

- Symptoms/injuries : Fatigue. Decrease of vision. High concentration of vapours may induce: headache, nausea, dizziness. Vomiting. Asphyxiant in high concentrations. May cause frostbite.
- Symptoms/injuries after inhalation : Asphyxiant in high concentrations. High concentration of vapours may induce: headache, dizziness, drowsiness, nausea and vomiting.
- Symptoms/injuries after skin contact : May cause frostbite.
- Symptoms/injuries after eye contact : May cause frostbite.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : carbon dioxide (CO₂), dry chemical powder, foam. For large fire : Water fog.
- Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread. Do not aim water directly at point where compressed gas is escaping, as the water may freeze. Do not extinguish flame due to possibility of explosive reignition.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable gas. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours. Explosive when mixed with oxidizing substances. Fight fire with normal precautions from a reasonable distance. Prolonged exposure to fire may cause containers to rupture/explode. Heavier than air, vapours may travel long distances along ground, ignite and flash back to source. May cause frostbite. Asphyxiant in high concentrations. Hazardous combustion products. On combustion forms: Carbon dioxide. Carbon monoxide.
- Explosion hazard : Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours. Reacts violently with oxidizing substances. Prolonged exposure to fire may cause containers to rupture/explode.
- Reactivity : May form an explosive mixture in the presence of air. Explosive when mixed with oxidizing substances. Reacts violently with acids. Explosion risk in case of fire. Lithium nitrate and sulphur dioxide: the resulting mixtures may polymerize explosively. Will explode on mixing with trimethyl hypofluorite in the absence of a diluent, such as nitrogen.

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

5.3. Advice for firefighters

- Firefighting instructions : Cool down the containers exposed to heat with a water spray. Wear proper protective equipment. Prolonged exposure to fire may cause containers to rupture/explode. Spray from a distance to keep far away from any possible explosion. In case of fire: stop leak if safe to do so.
- Protective equipment for firefighters : Complete protective clothing. Wear a 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

6.1.1. For non-emergency personnel

- Protective equipment : Boots. Gloves. Self contained breathing apparatus. For further information refer to section 8: Exposure-controls/personal protection.
- Emergency procedures : Avoid ignition sources. No smoking. Eliminate all ignition sources if safe to do so. Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Boots. Gloves. Complete protective clothing. In case of fire: Wear self-contained breathing apparatus. For further information refer to section 8: Exposure-controls/personal protection.
- Emergency procedures : Eliminate all ignition sources if safe to do so. Evacuate unnecessary personnel. Risk of suffocation due to oxygen deficiency in confined areas. Ventilate area.

6.2. Environmental precautions

Adsorption on activated charcoal. Avoid discharge to the environment. Do not discharge into surface water.

6.3. Methods and material for containment and cleaning up

- For containment : Adsorption on activated charcoal.
- Methods for cleaning up : Incineration. Adsorption on activated charcoal. Mechanically ventilate the spillage area.

6.4. Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection. For disposal of residues refer to section 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid all unnecessary exposure. Avoid inhalation of the product. Wear recommended personal protective equipment. Keep container closed when not in use. Containers must be properly grounded before beginning transfer. Cool the receiving container before transfer and ensure it is able to support the transfer operation at very low temperatures. Open and close cylinder valves at least once per day to avoid freezing. Have fire-fighting and leak stopping equipment readily available.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practices.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in tightly closed, properly ventilated containers away from heat, sparks, open flame. Store in dry, cool, well-ventilated area. Protect containers against damage. Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools. Use only explosion-proof equipment. Have fire-fighting and leak stopping equipment readily available. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide local exhaust or general room ventilation.
- Storage conditions : Do not store near oxidizing agents. Keep container closed when not in use. Keep away from open flames, hot surfaces and sources of ignition. Keep out of direct sunlight. Protect containers against damage. Underground storage. Put the cylinders underground and store them under soil level.
- Incompatible materials : Air. Water. Strong oxidizing agents. Acids. Vapours. Lithium nitrate and sulphur dioxide: the resulting mixtures may polymerize explosively. Trimethyl hypofluorite.
- Storage area : Keep away from heat and direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Keep only in the original container in a cool well ventilated place. Provide for an automatic sprinkler system.

7.3. Specific end use(s)

Refer to section 1.

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

8.2. Exposure controls

| | |
|----------------------------------|--|
| Appropriate engineering controls | : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Handle in accordance with good industrial hygiene and safety procedures. Local exhaust and general room ventilation are both essential to prevent accumulation of flammable vapour. Use explosion-proof equipment. Exhaust ventilation systems should be directly to the outside. Supply sufficient replacement air to compensate the air removed by exhaust systems. |
| Hand protection | : Protective gloves made of PVC. |
| Eye protection | : Chemical goggles or face shield with safety glasses. |
| Skin and body protection | : Boots. PVC apron covering the tops of the boots. Use chemically protective clothing. |
| Respiratory protection | : An approved organic vapour respirator/supplied air or self-contained breathing apparatus must be used when vapour concentration exceeds applicable exposure limits. |
| Environmental exposure controls | : Avoid release to the environment. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|----------------------------------|
| Physical state | : Gas |
| Molecular mass | : 42.08 g/mol |
| Colour | : Colourless |
| Odour | : Odourless |
| Odour threshold | : No data available |
| pH | : Not applicable |
| Relative evaporation rate (butyl acetate=1) | : Not applicable |
| Melting point | : -185.25 °C |
| Freezing point | : No data available |
| Boiling point | : -47.7 °C |
| Flash point | : -107.8 °C Closed cup |
| Auto-ignition temperature | : 455 °C |
| Decomposition temperature | : 91.6 °C |
| Flammability (solid, gas) | : Flammable |
| Vapour pressure | : 1043 kPa (10.3 atm) at 21.1°C |
| Relative vapour density at 20 °C | : 1.48 (20°C) |
| Relative density | : No data available |
| Density | : 0.07 (Liquid at boiling point) |
| Solubility | : Water: Slightly soluble |
| Log Pow | : 1.77 |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : 2 - 11 vol % |

9.2. Other information

| | |
|-----------|------------------|
| Gas group | : Compressed gas |
|-----------|------------------|

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

SECTION 10: Stability and reactivity

10.1. Reactivity

May form an explosive mixture in the presence of air. Explosive when mixed with oxidizing substances. Reacts violently with acids. Explosion risk in case of fire. Lithium nitrate and sulphur dioxide: the resulting mixtures may polymerize explosively. Will explode on mixing with trimethyl hypofluorite in the absence of a diluent, such as nitrogen.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

In contact with air, may generate explosive peroxides or unstable polymers which may detonate or ignite spontaneously. Vapours may form explosive mixture with air. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Hazardous polymerization may occur if exposure to fire conditions. Attacks some forms of plastics, rubber, and coatings.

10.4. Conditions to avoid

Direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Air. Incompatible materials. Temperatures higher than 50°C or less than -29°C. Excessive humidity. . insufficient ventilation.

10.5. Incompatible materials

Air. Water. Oxidizing agent. Acids. Attacks some forms of plastics, rubber, and coatings. Lithium nitrate and sulphur dioxide: the resulting mixtures may polymerize explosively. Will explode on mixing with trimethyl hypofluorite in the absence of a diluent, such as nitrogen.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-----------------------------------|--------------------|
| Acute toxicity | : Not classified |
| Skin corrosion/irritation | : Not classified |
| | pH: Not applicable |
| Serious eye damage/irritation | : Not classified |
| | pH: Not applicable |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

propene, propylene (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 |
| Potential Adverse human health effects and symptoms | : Asphyxiant in high concentrations. Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination. Contact with the liquid may cause cold burns/frostbite. |
| Symptoms/injuries after inhalation | : Asphyxiant in high concentrations. High concentration of vapours may induce: headache, dizziness, drowsiness, nausea and vomiting. |
| Symptoms/injuries after skin contact | : May cause frostbite. |
| Symptoms/injuries after eye contact | : May cause frostbite. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|---------------|---|
| Ecology - air | : Contributes to the formation of photochemical smog by degradation in the atmosphere through photochemical reactions to form photochemical oxidants and interfering with the photochemical cycle of nitrogen oxides. |
|---------------|---|

12.2. Persistence and degradability

propene, propylene (115-07-1)

| | |
|-------------------------------|------------------------|
| Persistence and degradability | Readily biodegradable. |
|-------------------------------|------------------------|

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

12.3. Bioaccumulative potential

| propene, propylene (115-07-1) | |
|-------------------------------|--------------------------------|
| Log Pow | 1.77 |
| Bioaccumulative potential | Low bioaccumulation potential. |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Incineration. Disposal must be done according to official regulations. Adsorption on activated charcoal.

Waste disposal recommendations : Disposal must be done according to official regulations.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1077 Propylene, 2.1

UN-No.(DOT) : UN1077

Proper Shipping Name (DOT) : Propylene

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

Hazard labels (DOT) : 2.1 - Flammable gas



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 Packaging Non Bulk (49 CFR 173.xxx) : 304

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

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"

Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 1077 PROPYLENE (PROPILENE), 2.1, (B/D)

Packing group (ADR) : Not specifically applicable (gas)

Class (ADR) : 2 - Gases

Hazard identification number (Kemler No.) : 23

Classification code (ADR) : 2F

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Danger labels (ADR) : 2.1 - Flammable gases



Orange plates :

| |
|------|
| 23 |
| 1077 |

Tunnel restriction code (ADR) : B/D

Excepted quantities (ADR) : E0

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, propylene (115-07-1) | |
| All components of this product are listed as active on the TSCA Inventory or exempt Subject to reporting requirements of United States SARA Section 313 | |
| SARA Section 313 - Emission Reporting | 1.0 % |

15.2. International regulations

CANADA

| | |
|---|--|
| propene, propylene (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

| |
|--|
| propene, propylene (115-07-1) |
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

15.2.2. National regulations

| |
|---|
| propene, propylene (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 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 CICR (Turkish Inventory and Control of Chemicals) |

15.3. US State regulations

No additional information available

SECTION 16: Other information

Revision date : 23 February 2022

Sources of Key data : Data arise from reference works and literature.

Polymer Grade Propylene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Abbreviations and acronyms : ACGIH - American Conference of Government Industrial Hygienists
IARC - International Agency for Research on Cancer
irr - irritation
TWA – Time-weighted average
URT – upper respiratory tract

Full text of H-statements:

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

Braskem - SDS US

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. It warns that the handling of any chemical substance requires the previous knowledge of its hazards for the user. It is up to the user of the product company providing this SDS to and promote the training of its employees about possible risks come upon of the product. The information contained herein is not absolute, but only general information on the use of the chemical and indication of safety and security measures.