SECTION 1. IDENTIFICATION

Product name : PROPYLENE - REFINERY GRADE
Synonyms : C3; 1-Propene; Methylene; Methylethene.
Product code : 101784

Manufacturer or supplier's details
SUNCOR ENERGY INC.
P.O. Box 2844, 150 - 6th Avenue South-West
Calgary Alberta T2P 3E3
Canada

Emergency telephone number
Suncor Energy: +1 403-296-3000;
Canutec Transportation: 1-888-226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Liquefied gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Sweetish.</td>
</tr>
</tbody>
</table>

GHS Classification

| Flammable gases | Category 1 |
| Gases under pressure | Liquefied gas |
| Specific target organ toxicity - single exposure | Category 3 (Central nervous system) |
| Simple Asphyxiant | Category 1 |

GHS label elements

Internet: www.petro-canada.ca/msds
Hazard pictograms : 

Signal word : Danger

Hazard statements : Extremely flammable gas. 
Contains gas under pressure; may explode if heated. 
May cause drowsiness or dizziness. 
May displace oxygen and cause rapid suffocation.

Precautionary statements : Prevention: 
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. 
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. 
Use only outdoors or in a well-ventilated area.
Response: 
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. 
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
In case of leakage, eliminate all ignition sources.
Storage: 
Store in a well-ventilated place. Keep container tightly closed. 
Store locked up. 
Protect from sunlight. Store in a well-ventilated place.
Disposal: 
Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects 
Primary Routes of Entry : Eye contact
Inhalation
Skin contact

Inhalation : Inhalation may cause central nervous system effects. 
May cause irritation of the respiratory tract. 
Mixture can displace oxygen, which may lead to an oxygen deficient atmosphere.

Skin : Contact with rapidly expanding gas may cause burns or frost-bite.

Eyes : Contact with rapidly expanding gas may cause burns or frost-bite.

Ingestion : Exposure by this route unlikely.

Aggravated Medical Condition : None known.

Other hazards : None known.
SAFETY DATA SHEET

PROPYLENE - REFINERY GRADE

Version 2.1  Revision Date 2018/06/07  Print Date 2018/06/07

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.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene</td>
<td>115-07-1</td>
<td>60 - 90 %</td>
</tr>
<tr>
<td>propane</td>
<td>74-98-6</td>
<td>15 - 40 %</td>
</tr>
<tr>
<td>butane</td>
<td>106-97-8</td>
<td>1 - 3 %</td>
</tr>
<tr>
<td>ethane</td>
<td>74-84-0</td>
<td>1 - 2 %</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it.
Wash clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
If eye irritation persists, consult a specialist.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

If swallowed : Not a significant route of exposure.
Inhalation is greater hazard and first aid measures for this route of exposure should be considered first.

Most important symptoms and effects, both acute and delayed : First aider needs to protect himself.
SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : No information available.

Specific hazards during firefighting : If the product release cannot be shut off safely, allow the product to burn itself out. Cool closed containers exposed to fire with water spray.

Hazardous combustion products : Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.

Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and full protective wear. Wear a positive-pressure supplied-air respirator with full face-piece.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Immediately evacuate personnel to safe areas.

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so. Ensure adequate ventilation. Use explosion-proof ventilation equipment. Non-sparking tools should be used. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Keep away from open flames, hot surfaces and sources of ignition. Do not use sparking tools. Do not enter areas where used or stored until adequately ven-
Conditions for safe storage:
- Store in original container.
- Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Keep in a dry, cool and well-ventilated place.
- Keep in properly labelled containers.
- To maintain product quality, do not store in heat or direct sunlight.
- Keep away from sources of ignition - No smoking.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene</td>
<td>115-07-1</td>
<td>TWA</td>
<td>500 ppm / 860 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>500 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>500 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>propane</td>
<td>74-98-6</td>
<td>TWA</td>
<td>1,000 ppm</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1,000 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1,000 ppm / 1,800 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td>butane</td>
<td>106-97-8</td>
<td>TWA</td>
<td>1,000 ppm</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>600 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>750 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>800 ppm / 1,900 mg/m³</td>
<td>CA QC OEL</td>
</tr>
</tbody>
</table>

#### Engineering measures:
- Use only in well-ventilated areas.
- Use explosion-proof ventilation equipment.
- Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.

#### Personal protective equipment

**Respiratory protection**: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Filter type**: Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

**Hand protection Material**: Wear insulated gloves to prevent frostbite.

**Remarks**: Chemical-resistant, impervious gloves complying with an
approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection: Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures: Wear suitable protective equipment.

Hygiene measures: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquefied gas

Colour: colourless

Odour: Sweetish.

Odour Threshold: No data available

pH: No data available

Pour point: No data available

Boiling point/boiling range: -48 °C (-54 °F) (1013 hPa)

Flash point: -108 °C (-162 °F) Method: Cleveland, closed cup

Fire Point: No data available

Auto-Ignition Temperature: 497 °C (927 °F)

Evaporation rate: No data available

Flammability: Extremely flammable in presence of open flames and sparks, of heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.

Upper explosion limit: 11.1 %(V)

Lower explosion limit: 2.4 %(V)

Vapour pressure: 8,690 mmHg (25 °C / 77 °F)
Relative vapour density: 1.5

Relative density:

Density: 514 kg/m³ (15 °C / 59 °F)

Solubility(ies)

Water solubility: No data available

Partition coefficient: n-octanol/water: No data available

Viscosity

Viscosity, kinematic: No data available

Explosive properties: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Vapour explosion hazard indoors, outdoors or in sewers. Containers may explode in heat of fire. Propylene may form explosive mixtures with air.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions: Hazardous polymerisation does not occur. Stable under normal conditions.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: Reactive with oxidising agents, acids and halogenated compounds.

Hazardous decomposition products: May release COx, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity: Remarks: No data available

Acute inhalation toxicity: Remarks: No data available

Acute dermal toxicity: Remarks: No data available
Components:
butane:
Acute inhalation toxicity : LC50 (Rat): 658 mg/l
  Exposure time: 4 h
  Test atmosphere: gas

Skin corrosion/irritation

Product:
Remarks: No data available

Serious eye damage/eye irritation

Product:
Remarks: No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure
No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:
Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to bacteria : Remarks: No data available
Persistence and degradability

**Product:**

Biodegradability: Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

**Product:**

Additional ecological information: No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues: The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labelled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.

Contaminated packaging: Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

International Regulations

**IATA-DGR**

UN/ID No.: UN 1077

Proper shipping name: Propylene

Class: 2.1

Packing group: Not assigned by regulation

Labels: Class 2 - Gases: Flammable (Division 2.1)

Packing instruction (cargo aircraft): 200

**IMDG-Code**

UN number: UN 1077

Proper shipping name: PROPYLENE

Class: 2.1
SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

The components of this product are reported in the following inventories:
- DSL: On the inventory, or in compliance with the inventory
- TSCA: On TSCA Inventory

SECTION 16. OTHER INFORMATION

For Copy of SDS: Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by: Product Safety: +1 905-804-4752
Revision Date: 2018/06/07

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