SAFETY DATA SHEET

Classified in accordance with Health Canada Hazardous Products Regulations (SOR/2015-17)

1. Identification

Product identifier: Polymer Grade Propylene

Other means of identification

Common name(s), synonym(s): Propylene, propene, 1-propene

SDS number: NOVA-0150

Recommended use and restriction on use

Recommended use: Raw material for chemicals and polymers, fuel gas products.

Restrictions on use: All uses other than the identified.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer

Company Name:	NOVA Chemicals Olefins LLC
Address:	P.O. Box 470 Geismar, Louisiana, USA 70734
Telephone:	Product Information: 1-412-490-4063
SDS Information Email:	msdsemail@novachem.com

Emergency telephone number:

1-800-561-6682, 1-403-314-8767 (NOVA Chemicals) (24 hours)
1-800-424-9300 (CHEMTREC) (24 hours)

2. Hazard(s) identification

Hazard Classification According to Hazardous Products Regulations

Physical Hazards

Flammable gas	Category 1A
Gases under pressure	Liquefied gas
Simple asphyxiant	Category 1

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement:

Extremely flammable gas.
Contains gas under pressure; may explode if heated.
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.

Response: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

Storage: Protect from sunlight. Store in a well-ventilated place.

Other hazards which do not result in GHS classification: Contact with liquefied gas may cause irritation and/or frostbite.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
1-Propene	Propylene	115-07-1	>99.5%

* All concentrations are percent by weight.

Additional Information: This product may contain very low levels of Naturally Occurring Radioactive Materials (NORM), which have been identified as Radon 222 (CAS No. 14859-67-7) and its main radioactive decay products, Lead 210 (CAS No. 14255-04-0) and Polonium 210 (CAS No. 13981-52-7). See Section 16 - Further information. This product is considered hazardous by the Hazardous Products Regulations.

4. First-aid measures

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Seek medical attention.

Ingestion: Ingestion of this product is not a likely route of exposure. Do NOT induce vomiting. Seek medical attention.

Skin Contact: Contact with liquefied gas may cause irritation and/or frostbite. Seek medical attention immediately in the event of frostbite. IF ON SKIN: Gently wash with plenty of soap and water. Thaw frosted parts with lukewarm water. Do not rub affected area. Remove non-adhering contaminated clothing. Do not remove adherent material or clothing. Seek medical attention.

Eye contact: Contact with liquefied gas may cause irritation and/or frostbite. Seek medical attention immediately in the event of frostbite. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

Most important symptoms/effects, acute and delayed

Symptoms: Frostbite can occur with exposure to liquefied gases. High concentrations reduce available oxygen levels and may cause headache, dizziness, nausea, loss of coordination, difficulty breathing, suffocation, or cardiac rhythm disturbance.

Indication of immediate medical attention and special treatment needed

Treatment: Treat unconsciousness, hypotension, seizures, cardiac dysrhythmias, and frostbite in the conventional manner. Adrenergic (epinephrine, norepinephrine) and dopaminergic agonists should be avoided during treatment or used with caution (lowest effective dose) because of possible cardiac sensitization by this product mixture. Administer oxygen by mask if there is respiratory distress, any change in level of

consciousness, or cardiac rhythm disturbance.

5. Fire-fighting measures

General Fire Hazards: Extremely flammable liquefied gas. Vapours are heavier than air and may travel to a source of ignition and flash back. DO NOT ATTEMPT TO EXTINGUISH A GAS FIRE UNLESS LEAK SOURCE CAN BE ISOLATED AND SHUT OFF. Be aware of possibility of reignition. Vapours may form explosive mixture with air. Consider need for immediate emergency isolation and evacuation. If a pipeline, storage vessel, rail car or tank truck is involved in a fire, ISOLATE for 1600 metres (1 mile) in all directions; also, consider initial evacuation for 1600 metres (1 mile) in all directions. Keep containers away from source of heat or fire. Contains gas under pressure; may explode if heated.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use dry chemical, foam, carbon dioxide (CO2), water spray or fog to extinguish. Use water to cool fire-exposed containers and to protect personnel.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Upon combustion, this product emits carbon monoxide, carbon dioxide, low molecular weight hydrocarbons.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: Keep upwind. Keep unauthorized personnel away. Move containers from fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices as icing may occur. Immediately withdraw in case of fire and container venting or heat discolouration of a container. Let uncontrolled fires burn off. Avoid inhaling any smoke and combustion materials. Remove and isolate contaminated clothing and shoes. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Reference Emergency Response Guidebook No. 115 for additional details and instructions.

Special protective equipment for fire-fighters: Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire-fighters' protective clothing provides thermal protection **but only limited chemical protection**.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unauthorized personnel away. Alert stand-by emergency and fire-fighting personnel. Monitor surrounding area for buildup of flammable concentrations in air.

Methods and material for containment and cleaning up: Wear appropriate personal protective equipment. Do not touch or walk through spilled material. In case of leakage, eliminate all ignition sources. Keep upwind. Keep out of low areas. Stop leak if safe to do so. All equipment used when handling the product must be grounded. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Keep area isolated until any detectable flammable gas has been fully dispersed.

Small Spills: Isolate spill or leak area for at least 100 metres (330 feet) in all directions.

Large Spills: Consider initial downwind evacuation for at least 800 metres (1/2 mile). Evacuate personnel to upwind of the spill area, and position at a safe distance. Use water spray to reduce gas or divert gas cloud drift.

7. Handling and storage

Precautions for safe handling:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. For additional information on equipment bonding and grounding, refer to the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity". Take special precautions when cold cutting or breaking into lines, or when cleaning and disposing of empty containers. Radioactive decay products may accumulate over time in scale or deposits in processing equipment (e.g. pumps, filters, piping, etc.). Equipment and piping should be checked for possible treatment (decontamination) prior to maintenance or disposal/salvage. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Conditions for safe storage, including any incompatibilities:

Protect from sunlight. Store in a well-ventilated place. Keep container tightly closed. Only allow access to authorized persons. Store and handle in properly designed pressure vessels and equipment. Store and use away from heat, sparks, open flame, or any other ignition source. Have appropriate extinguishing capability in storage area (e.g. sprinkler system, portable fire extinguishers) and flammable gas detectors. Storage pressure vessels should be above ground and diked. Store away from incompatible materials. Store according to applicable regulations and standards for flammable materials.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values		Source
1-Propene	TWA	500 ppm	860 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended
1-Propene	TWA	500 ppm		Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended
1-Propene	TWA	500 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended
1-Propene	TWA	500 ppm		Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended
1-Propene	TWA	500 ppm		US. ACGIH Threshold Limit Values, as amended

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Appropriate Engineering Controls

Engineering methods to reduce hazardous exposure are preferred controls. Methods include mechanical ventilation (dilution and local exhaust) process or personal enclosure, remote and automated operation, control of process conditions, leak detection and repair systems, and other process modifications. Ensure all exhaust ventilation systems are discharged to outdoors, away from air intakes and ignition sources. Supply sufficient replacement air to make up for air removed by exhaust systems. Administrative (procedure) controls and use of personal protective

equipment may also be required.

Individual protection measures, such as personal protective equipment (PPE)

General information: Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard potential and ensure adequate protection.

Eye/face protection: Safety glasses. Chemical goggles under a full-face shield or respirator are recommended if contact with liquefied gas is possible.

Skin Protection

Hand Protection: Wear cold insulating gloves.

Skin and Body Protection: Wear appropriate clothing to prevent any possibility of skin contact. Wear work clothes with long sleeves and pants. Fire resistant (i.e., Nomex) or natural fibre clothing (i.e., cotton or wool) is recommended. Synthetic clothing can generate static electricity and is not recommended where a flammable vapour release may occur. Wear chemical-resistant safety footwear with good traction to prevent slipping. Static Dissipative (SD) rated footwear is also recommended.

Respiratory Protection: Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed OEL.

Hygiene measures: Use effective control measures and PPE to maintain worker exposure to concentrations that are below these limits. Ensure that eyewash stations and safety showers are in close proximity to work locations.

9. Physical and chemical properties

Appearance

Physical state:	Gas
Form:	Liquefied gas
Colour:	Colourless
Odour:	Faint hydrocarbon odour
Odour Threshold:	23 ppm (detection)
Melting point/freezing point:	-185 °C (-301 °F)
Initial boiling point and boiling range:	-48 °C (-54 °F)
Flammability:	Extremely flammable.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	11 %(V)
Flammability limit - lower(%):	2 %(V)
Flash Point:	-108 °C (-162 °F)
Auto-ignition temperature:	455 °C (851 °F)
Decomposition temperature:	No data available.
pH:	not applicable
Kinematic viscosity:	not applicable

Solubility(ies)

Solubility in water:	200 mg/l (25 °C (77 °F))
Solubility (other):	Soluble in acetic acid and ethanol

Partition coefficient (n-octanol/water):	1.77
Vapour pressure:	1,158 kPa (25 °C (77 °F))
Evaporation rate:	not applicable
Density:	1.81 kg/m3 (20 °C (68 °F))
Relative density:	0.5139 (20 °C (68 °F)) (Water=1)
Vapour density:	1.49 (20 °C (68 °F)) (Air=1)
Particle characteristics	
Particle Size:	not applicable
Other information	
Explosive properties:	No data available.

10. Stability and reactivity

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability:	Stable under normal conditions.
Possibility of Hazardous Reactions:	Liquefied gas may explode on contact with hot water (45 °C to 75 °C) (113 °F to 167 °F). May react vigorously with oxidizing agents. Hazardous polymerization not likely to occur except under favourable conditions requiring heat and catalyst.
Conditions to Avoid:	Keep away from heat, sparks and open flame.
Incompatible Materials:	Strong oxidizing agents. Nitrogen oxides. Nitrates. Perchlorates. Many materials become brittle after contact with liquefied gases and may fail without warning. Carefully select and test equipment, gaskets and hoses periodically to ensure integrity and compatibility.
Hazardous Decomposition Products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide, low molecular weight hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	May displace oxygen and cause rapid suffocation.
Ingestion:	Ingestion of this product is not a likely route of exposure.
Skin Contact:	The liquefied form will cause freezing burns (frostbite).
Eye contact:	The liquefied form will cause freezing burns (frostbite).

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	High concentrations reduce available oxygen levels and may cause headache, dizziness, nausea, loss of coordination, difficulty breathing, suffocation, or cardiac rhythm disturbance.
Ingestion:	No adverse effects due to ingestion are expected.
Skin Contact:	Frostbite or burns.
Eye contact:	Frostbite or burns.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: Not classified for acute toxicity based on available data.

Dermal
Product: Not classified for acute toxicity based on available data.

Inhalation
Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: (Rat, Inhalation - gas, 2 yr): > 4985 ppm (Target Organ(s): nasal cavity) (LOAEL) (propylene)

Skin Corrosion/Irritation
Product: The liquefied form will cause freezing burns (frostbite).

Serious Eye Damage/Eye Irritation
Product: The liquefied form will cause freezing burns (frostbite).

Respiratory or Skin Sensitization
Product: No data available.

Carcinogenicity
Product: Not classified

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

ACGIH Carcinogen List:
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

Components:
1-Propene — A weak mutagenic response was observed with *Salmonella typhimurium* strains TA1535 exposed to propylene in the presence of S9 mix but not in the absence of S9.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: Not classified

Specific Target Organ Toxicity - Repeated Exposure
Product: Not classified. In the nasal cavity, propylene induced nasal lesions of relatively mild nature and relatively few animals were affected.

Aspiration Hazard
Product: not applicable

Other effects: Propylene that is inhaled is largely exhaled unchanged. A small fraction may be metabolized and transported in blood as propylene oxide. There is no known health effect found to be associated with this metabolism in 2-year cancer studies or in studies of potential adverse genetic effects.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to aquatic plants
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to aquatic plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: Results of distribution modeling show that chemical constituents of streams in the Propylene Streams Category will partition primarily to the air compartment, with a negligible amount partitioning to water. In the air, these constituents have the potential to rapidly degrade through indirect photolytic processes mediated primarily by hydroxyl radicals. This is expected to be the dominant route of loss and degradation process for constituents of these streams. Aqueous photolysis and hydrolysis will not contribute to the transformation of category constituents in aquatic environments because they are either poorly or not susceptible to these reactions.

Although the biodegradability of streams in this category has not been evaluated with standard testing procedures because of their high volatility, studies have demonstrated that the predominant category constituents can be degraded by bacteria isolated from soil and surface water samples.

Biodegradation is unlikely to contribute to the overall degradation of constituents from these streams because they tend to partition to the air compartment. Propylene will degrade rapidly in air; with a calculated atmospheric half-life range of 4.9 hours.

BOD/COD Ratio
Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: Not expected to bioaccumulate.

Partition Coefficient n-octanol / water (log Kow)

Product: 1.77

Mobility in Soil: Subject to microbial degradation.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of contents and container in accordance with local regulations. Waste generator is advised to carefully consider hazardous properties and control measures needed for other materials that may be found in the waste.

Contaminated Packaging: Check local, federal and provincial environmental regulations prior to disposal.

14. Transport information

TDG

UN number or ID number:	UN 1077
UN Proper Shipping Name:	PROPYLENE
Shipping Name Continued:	Not Odorized
Class	2.1
Packing Group	–
Label(s)	2.1
Special precautions for user:	Reference Emergency Response Guidebook No. 115, latest revision.

15. Regulatory information

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Not regulated

Export Control List (CEPA 1999, Schedule 3)

Not regulated

Greenhouse Gases

Not regulated

Precursor Control Regulations

Not regulated

Canada. Substances Subject to Significant New Activity (SNAc) Reporting Requirements

Not regulated

Inventory status

Canada DSL Inventory List:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory

16. Other information, including date of preparation or last revision

Issue Date: 05/12/2025

Revision Information:

05/12/2025: SDS Update – GHS classification change, phrase edits
05/21/2024: SDS Update – phrase edits
11/20/2023: SDS Update – composition edits
03/13/2020: New SDS

Version #:

2.0

Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists; BOD = Biochemical Oxygen Demand; CAS = Chemical Abstracts Service; CEPA = Canadian Environmental Protection Act; COD = Chemical Oxygen Demand; DSL = Domestic Substances List; EC50 = Effective Concentration 50%; EPA = Environmental Protection Agency; GHS = Globally Harmonized System for the Classification and Labelling of Chemicals; IARC = International Agency for Research on Cancer; IDLH = Immediately Dangerous to Life or Health; Kow = Octanol/water partition coefficient; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; LEL = Lower Explosive Limit; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OEL = Occupational Exposure Limit; OSHA = Occupational Safety and Health Administration; PNOC = Particulates Not Otherwise Classified; PPE = Personal Protective Equipment; REL = Recommended Exposure Limit; SCBA = Self Contained Breathing Apparatus; SDS = Safety Data Sheet; STEL = Short Term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Further Information:

For additional information on equipment bonding and grounding, refer to the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity".

Naturally Occurring Radioactive Material (NORM): This information is given to call attention to the issue of Naturally Occurring Radioactive Material (NORM) contamination. Industry experience has shown that this product may contain small amounts of Radon-222 (Rn-222) and its radioactive decay products.

Radon-222 is a naturally occurring radioactive gas that has been found to be a contaminant in natural gas. During processing, Rn-222 tends to be concentrated in the liquefied petroleum gas stream and in product streams having a similar boiling point range. Although Rn-222 levels in this product do not present any direct radon exposure, customers should be aware of the potential for buildup of Rn-222 decay products within their processing streams. The concentration of Rn-222 decay products in processing equipment (e.g. pumps, filters, piping, etc.) may accumulate to a point where gamma radiation is detected outside of this equipment during normal operations.

Field studies quoted in the literature, and those conducted by company personnel, have not shown any conditions, which subject workers to cumulative exposures that may exceed regulated limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha-emitting decay products (i.e. Lead-210, Polonium-210). These decay products may be a health hazard if inhaled or ingested. Equipment and piping should be checked for possible treatment (decontamination) prior to maintenance or disposal/salvage.

Protective equipment (e.g. coveralls, gloves, and a respirator with HEPA filters, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any NORM contaminated residue. Airborne contamination may be minimized by handling contaminated materials in a wet state.

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