Ovintiv Safety Data Sheet (U.S.)

Propane

1.0 Identification

GHS product identifier: propane	**Version #:** 03
Synonyms: aliphatic paraffinic hydrocarbon gas	**Issue date:** 01/01/2020
CAS #: 74-98-6	
Recommended use: Product produced at Ovintiv well sites for sale.	
Recommended restrictions: Use in accordance with this SDS.	
Manufacturer: Ovintiv USA Inc., 370 17th Street, Suite 1700, Denver, CO 80202	
Emergency phone #: 800-262-8200 or 911	**Email:** myEHS@ovintiv.com

2.0 Hazard Identification

2.1 GHS Classification and Label Elements

Signal Word: Danger			
Type of Hazard		**Category**	**Hazard Symbol**
Physical hazards	Flammable gases Gases under pressure	1 Liquefied gas	
Health hazards	Acute toxicity, oral Specific target organ toxicity, single exposure	4 3 narcotic effects	
Environmental hazards	None	None	None

2.2 Hazard Statement

- Extremely flammable gas.
- Contains gas under pressure.
- May explode if heated.
- May cause drowsiness or dizziness.
- May displace oxygen and cause rapid suffocation.

2.3 Precautionary Statement

- Prevention
  - Keep away from heat/sparks/open flames/hot surfaces.

  - No smoking.
  - Keep container tightly closed.
  - Avoid breathing gas.
  - Use only outdoors or in a well-ventilated area.
  - Wear respiratory protection.
- Response
  - Leaking gas fire: Do not extinguish unless leak can be stopped safely.
  - Eliminate all ignition sources if safe to do so.
- Storage
  - Protect from sunlight.
  - Store in a well-ventilated place.
  - Keep container tightly closed.
  - Store locked up.
- Disposal
  - Dispose of contents/container in accordance with local/regional/national/international regulations.
- Hazards not otherwise classified
  - None

3.0 Composition/Information on Ingredients

Components	CAS #	Percent (Weight)
Propane	74-98-6	95-100
Ethane	74-84-0	<5

4.0 First Aid Measures

4.1 First Aid Procedures

- Inhalation:
  - Move victim to fresh air.
  - If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag-mask respirator.
  - Get immediate medical attention.
  - If the victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.
- Skin contact:
  - Frostbite: Do not remove clothes, but flush with copious amounts of lukewarm water.
  - Call and ambulance and continue to flush during transportation to hospital.
- Eye contact:
  - Frostbite: Immediately and briefly flush with lukewarm, gently flowing water.
  - Cover both eyes with a sterile dressing. Immediately obtain medical attention.
- Ingestion:
  - This material is a gas at normal atmosphere conditions; ingestion is unlikely.

4.2 Most Important Symptoms (Effects Acute and Delayed)

- Due to oxygen deficiency, inhalation of gas may cause dizziness, light-headedness, headache, nausea, and loss of coordination.
- Continued inhalation may result in unconsciousness.
- Contact with liquefied gas may cause frostbite.

4.3 Indication of Immediate Medical Attention and Special Treatment

- Inhalation overexposure can produce toxic effects.
- Monitor for respiratory distress.
- If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis.

4.4 General Information

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5.0 Fire-Fighting Measures

5.1 Flammable Properties

- Extremely flammable gas.
- Contains gas under pressure; may explode if heated or under fire.
- See Sections 9.0 Physical and Chemical Properties and 10.0 Stability and Reactivity for physical/chemical and stability/reactive properties.
- NFPA: health 2, flammability 4, instability: 0.

Extinguishing Media

Suitable	Do Not Use
• Carbon dioxide (CO_2) • Dry powder • Water fog	• Water jet, which will spread the fire.

Protection of Fire-Fighters

Specific Hazards Arising from Product	Protective Equipment and Precautions
• During fire, gases hazardous to health may be formed.	• Fire-fighters should wear appropriate protective equipment and a self-contained breathing apparatus (SCBA) with full-face piece operated in positive pressure mode if fighting fire in poorly ventilated area. • Use approved gas detectors. • Gas cylinders and pressure vessels can burst violently when heated, due to excess pressure build-up.

5.2 Fire-Fighting Equipment/Instructions

- The gas could form an explosive mixture with air and re-ignite resulting in a sudden violent flash fire, which may cause far more damage than if the original fire had been allowed to burn.
- Stop leak if you can do so without risk.
- Evacuate area and fight fire from a safe distance.
- Evacuate area.
- Check oxygen content before entering area.
- Water spray should be used to cool containers.
- Remove pressurized gas cylinders from the immediate vicinity.
- Containers can burst violently when heated, due to excess pressure build-up.

6.0 Accidental Release Measures

- Personal precautions:
  - If propane leaks, evacuate all personnel until ventilation can restore oxygen concentrations to safe levels.
  - Keep unnecessary personnel away.
  - Keep people away from and upwind of spill/leak.
  - Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (e.g., sewers, basements, and tanks).
  - Eliminate all ignition sources (smoking, flares, sparks, or flames) in area.
  - Wear suitable protective clothing, gloves, and eye/face protection (see Section 8.0 Exposure Controls/Personal Protection of this SDS).
  - Emergency personnel need self-contained breathing equipment (see Section 5.0 Fire-Fighting Measure of this SDS).
  - Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
  - Ventilate closed spaces before entering them.
  - Local authorities should be advised if significant spillages cannot be contained.
- Environmental precautions
  - Prevent further leakage or spillage if safe to do so.
  - Avoid discharge into drains, water courses, or onto the ground.
- Methods for cleaning up:
  - Eliminate ignition sources including sources of electrical, static, or frictional sparks.
  - Extinguish all flames in the vicinity.
  - Stop leak if you can do so without risk.
  - Ventilate area.
  - Isolate area until gas has dispersed.
  - Collect and dispose of spillage as indicated in Section 13.0 Disposal Considerations of this SDS.

7.0 Handling and Storage

7.1 Safe Handling Precautions

- Material may deplete oxygen from the air to dangerously low levels.
- Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content and flammability.
- The product is extremely flammable and explosive vapor/air mixtures may be formed even at normal room temperatures.
- Do not handle, store, or open near an open flame, sources of heat or sources of ignition.
- Protect material from direct sunlight.
- Do not smoke.
- Take measures to prevent the buildup of electrostatic charge.
- All equipment used when handling the product must be grounded.
- Use non-sparking tools and explosion proof equipment.
- Avoid breathing gas and prolonged exposure.
- Provide adequate ventilation.
- Always wear NIOSH-approved, positive pressure air supplied respirator when handling this material.
- Wear appropriate personal protective equipment (PPE).
- Observe good industrial hygiene practices.
- HMIS: health: 2, flammability: 4, physical hazards: 0.

7.2 Conditions for Safe Storage Including Incompatibilities

- Store locked up and separate from ozone.
- Store in a cool, dry, well-ventilated area in tightly sealed containers and protect from physical damage and heat.
- Keep away from heat, sparks, and open flame.
- Prevent electrostatic charge buildup by using common bonding and grounding techniques. This material can accumulate static charge which may cause spark and become an ignition source.
- Refrigeration is recommended.
- Keep away from incompatible material. May form explosive mixtures in presence of oxidizing substances (e.g., gas and dust).

- Store away from incompatible materials: oxidizing agents, fluorine, chlorine, and nitrates (Section 10.0 Stability and Reactivity).

8.0 Exposure Controls/Personal Protection

Occupational Exposure Limits

Component	Limit Type	OSHA PEL	ACGIH TLV	NIOSH REL
Propane CAS# 74-98-6	STEL TWA	None 1000 ppm	None None	None 1000 ppm

TABLE NOTES:

STEL=short-term exposure limit, PEL=permissible exposure limit, REL=recommended exposure limit, TLV=threshold limit value, TWA=time-weighted average, ppm=parts per million.

8.1 Engineering Controls

- Make sure sufficient oxygen (19.5% exists) before entry.
- Use explosion-proof equipment.

8.2 Personal Protective Equipment

- Eye face protection: Wear safety glasses with side shields or goggles.
- Skin protection: Wear cold insulating gloves. Suitable gloves can be recommended by the glove supplier. Wear appropriate chemical-resistant clothing.
- Respiratory protection: Use a NIOSH/MSHA-approved air purifying respirator as needed to control exposure. Control with respirator manufacturer to determine respirator selection, use, and limitations. Follow respirator protection requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use. Protection provided by air-purifying respirators is limited and should not be used in atmospheres deficient in oxygen or where airborne concentrations are immediately dangerous to life or health. Use a positive-pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
- Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

8.3 General Hygiene

- Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, or smoking.
- Routinely wash work clothing and protective equipment to remove contaminants.
- Do not smoke when using propane.

9.0 Physical and Chemical Properties

Physical state	Gas compressed
Form	Liquefied gas
Color	Clear, colorless
Odor	Odorless or mercaptan-like
pH	Not available
Melting point/freezing point	-188°C (-306.4°F)
Initial boiling point	-42°C (-43.6°F)
Flash point	-104°C (-43.6°F)
Lower explosive limit (by volume)	2%
Upper explosive limit (by volume)	9.5%
Vapor pressure	Not available
Vapor density	1.5
Relative density	0.5
Solubility	Not available
Partition coefficient (n-octanol/water)	<0.1
Auto-ignition temperature	450°C (842°F)
Decomposition temperature	Not available
Viscosity	Not available

10.0 Stability and Reactivity

- Reactivity: This product is stable and non-reactive under normal conditions of use, storage, and transport.
- Chemical stability: Stable at normal conditions.
- Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
- Conditions to avoid: Exposure to sunlight, heat, open flame, ignition sources, and light.
- Incompatible materials: Strong oxidizing agents, fluorine, chlorine, and nitrates.
- Hazardous decomposition products: Thermal decomposition or combustion may liberate carbon oxides, fluorine, and other toxic gases or vapors.

11.0 Toxicological Information

11.1 Routes of Exposure

- Ingestion: This material is a gas under normal atmospheric conditions and ingestion is unlikely.

- Inhalation: Due to oxygen deficiency, inhalation of gas may cause dizziness, light-headedness, headache, nausea, and loss of coordination. Continued inhalation may result in unconsciousness.
- Skin contact: Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.
- Eye contact: Contact with liquefied gas can cause frostbite.

11.2 Toxicological Effects

- Acute effects: Suffocation (asphyxiant) hazard – if allowed to accumulate to concentrations that reduce oxygen levels below safe breathing levels. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite.
- Chronic effects: Prolonged or repeated exposure to high concentrations may affect the central nervous system.

11.3 Skin Corrosion/Irritation

- Contact with liquefied gas may cause frostbite and tissue damage.

11.4 Eye Irritation

- May cause eye irritation on direct contact.

11.5 Sensitization

- Not a skin sensitizer.

11.6 Mutagenicity

- Not classified.

11.7 Carcinogenicity

- This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

11.8 Reproductive Toxicity

- Not classified.

11.9 Specific Target Organ Toxicity – Single Exposure

- Narcotic effects.

11.10 Specific Target Organ Toxicity – Repeated Exposure

- Not classified.

11.11 Chronic Effects

- Prolonged inhalation may be harmful.
- May cause nervous system effects.

Component Toxicity

Component	LD_{50} Oral	LD_{50} Dermal	LC_{50}
Ethane (74-84-0)	Not available	Not available	658,000 mg/m^3 (4-hour, inhalation, rat)
Propane (74-98-6)	Not available	Not available	658,000 mg/m^3 (4-hour, inhalation, rat)

12.0 Ecological Information

- Ecotoxicity: Not expected to be harmful to aquatic organisms.
- Persistence and degradability: No data is available.
- Aquatic toxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Bioaccumulative potential: No data is available.
- Mobility in soil: This product is a gas, which, if spilled, preferentially volatilizes into air instead of absorbing into soil. However, gases can dissolve in water at the spill site and move through soil.
- Other adverse effects: No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, endocrine disruption, and global warming potential) are expected from this component.

13.0 Disposal Considerations

It is the responsibility of the user to determine if the material is considered hazardous for disposal under federal, state, and local regulations.

14.0 Transportation Information

US DOT

UN number	1978
UN proper shipping name	Propane
Transport hazardous class	2.1
Packing group	Not applicable
Environmental hazards: marine pollutant	No
Labels required	2.1
Packaging exceptions	306
Packaging non-bulk	304
Packaging bulk	314,315
Special precautions for the user	Read safety instructions, SDS, and emergency procedures before handling.

IATA

UN number	1978
UN proper shipping name	Propane
Transport hazardous class(es)	2.1
Packing group	Not applicable
Environmental hazards	No
Label required	2.1
ERG code	10L
Special precautions for the user	Read safety instructions, SDS, and emergency procedures before handling.

IMDG

UN number	1978
UN proper shipping name	Propane
Transport hazardous class(es)	2.1
Packing group	Not applicable
Environmental hazards: marine pollutant	No
Label required	2.1
EmS	F-D, S-U
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.
Special precautions for the user	Read safety instructions, SDS, and emergency procedures before handling.

15.0 Regulatory Information

U.S.

OSHA	This product is a hazardous chemical, as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA	This product is not listed in the TSCA chemical inventory.
SARA Section 302	Not listed.
SARA Section 304	Not listed.
SARA Section 311/312	This product contains propane and ethane, which may be subject to SARA reporting requirements.
SARA Section 313	Not regulated.
Clean Air Act	Ethane and Propane
Safe Drinking Water Act	Ethane and Propane
Massachusetts RTK Substance List	Ethane and Propane

New Jersey Worker and Community Right-to-Know-Act	Ethane and Propane
Pennsylvania Worker and Community Right-to-Know Act	Ethane and Propane
Rhode Island RTK	Ethane and Propane

International Inventories

Country or Region	Inventory Name	On Inventory (Yes/No)
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

16.0 Other Information, Including Date of Preparation of Last Version

Issue date: 01/01/2020

Version #: 03

References: IARC Monographs. Overall Evaluation of Carcinogenicity (Volumes 1-102) IUCLID. Hazardous Substances Data Bank.

Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.