PLAINS MIDSTREAM CANADA

SAFETY DATA SHEET

Propane with Odourant

Date of Preparation: June 4, 2012

Section 1: IDENTIFICATION

Product Name:	Propane with Odourant
Synonyms:	Not available.
Product Use:	Industrial applications.
Restrictions on Use:	Not available.
Manufacturer/Supplier:	Plains Midstream Canada Suite 1400, 607 – 8th Avenue SW Calgary, Alberta T2P 0A7
Phone Number:	1-866-875-2554
Emergency Phone:	Canutec (613) 996-6666 or *666 Cellular
Date of Preparation of SDS:	June 4, 2012

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION:

Classification of the substance or mixture: Flammable gas Category 1
Gas under pressure, Liquefied gas

Label elements:
Hazard Pictogram(s):



Signal Word: Danger

Hazard Statements:
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, sparks, open flames, and hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical, ventilating, and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use appropriate extinguishing media for surrounding fire to extinguish.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.

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

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

Potential Health Effects: See Section 11 for more information.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.

Medical Conditions Aggravated By Exposure: Not available.

Target Organs: Skin. Eyes. Respiratory system. Blood. Liver. Kidneys. Nervous system.

Potential Environmental Effects: See Section 12 for more information.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component(s) / Ingredient(s)	Common name / Synonyms	CAS No.	Wt. %
Propane	Not available.	74-98-6	100
Ethanethiol	Ethyl mercaptan	75-08-1	< 0.1

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

Inhalation: Remove person to fresh air. If breathing has stopped apply artificial respiration. If signs/symptoms develop, get medical attention. **Acute and delayed symptoms and effects:** This product is an asphyxiant gas that can cause unconsciousness and/or death if oxygen levels are sufficiently reduced. May cause respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Flush eyes with plenty of warm water for at least 15 minutes. Get medical attention immediately. **Acute and delayed symptoms and effects:** Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result.

Skin Contact: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Flush immediately with warm water. Remove non-adhering contaminated clothing. Do not remove adherent material or clothing. Get medical attention immediately. **Acute and delayed symptoms and effects:** Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

Ingestion: Not a normal route of exposure. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately. **Acute and delayed symptoms and effects:** Not a normal route of exposure.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

Flammability: Extremely flammable gas. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosion. May be ignited by contact with heat, sparks or open flame. Gas may accumulate in confined spaces. Gas can travel considerable distances to ignition sources and cause a flash fire.

Means of Extinction
Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire.
Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of sulphur.

Protection of Firefighters: Do not extinguish fire if source of gas cannot be safely turned off. If flames are accidentally extinguished explosive re-ignition may occur if ignition sources are not controlled. Be alert to container rupture potential if tanks are involved in a fire. Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and self-contained breathing apparatus.

Explosion Data
Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge: This material is sensitive to static discharge.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Evacuate all unnecessary personnel. Stay upwind. Eliminate all ignition sources. Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental Precautions: Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods for Containment: Control release of gas if without risk.

Methods for Clean-Up: Isolate area until gas has dispersed.

Other Information: Dispose of in accordance with all federal, provincial and local regulations. Comply with federal, provincial, and local requirements for spill and/or release notification.

Section 7: HANDLING AND STORAGE

Handling:
Avoid contact with skin and eyes. All equipment used when handling the product must be grounded. Wash hands before eating, drinking, or smoking. See Section 8 for information on Personal Protective Equipment.

Storage:
Store in cool, dry, well-ventilated area away from incompatible materials, heat, and sources of ignition. All storage containers and pumping equipment should be grounded. Keep out of the reach of children. See Section 10 for information on Incompatible Materials.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines
Component

Propane [CAS No. 74-98-6]

ACGIH: 1000 ppm (TWA); (2001)

OSHA: 1000 ppm (TWA), 1800 mg/m^3 (TWA);

Ethyl mercaptan [CAS No. 75-08-1]

ACGIH: 0.5 ppm (TWA); (2003)
OSHA: 10 ppm (C), 25 mg/m³ (C);
0.5 ppm (TWA) [Vacated]

PEL: Permissible Exposure Limit
TLV: Threshold Limit Value
TWA: Time-Weighted Average
STEL: Short-Term Exposure Limit
C: Ceiling

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits. Use explosion-proof ventilation equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Safety glasses are recommended.

Hand Protection: Wear impervious gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear suitable protective clothing. Flame resistant clothing such as Nomex ® is recommended in areas where material is stored or handled.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquefied gas.
Colour:	Colourless.
Odour:	Mercaptan, skunky odor.
Odour Threshold:	Not available.
Physical State:	Gas.
pH:	Not available.
Viscosity:	Not available.
Melting Point / Freezing Point:	-186 °C

Initial Boiling Point:	Not available.
Boiling Point:	-42 °C
Flash Point:	-104.4 °C (Closed Cup)
Evaporation Rate:	Not available.
Lower Flammability Limit:	2.1 %
Upper Flammability Limit:	9.5 %
Flammability (solid, gas):	Extremely flammable gas.
Vapor Pressure:	767.952 kPa (20 °C)
Vapor Density:	1.6 (Air = 1)
Relative Density:	0.59 (Water = 1)
Density:	Not available.
Solubility in Water:	Insoluble.
Other solubilities:	Not available.
Partition Coefficient: n-Octanol/Water:	Not available.
Coefficient of Water/Oil Distribution:	Not available.
Auto-ignition Temperature:	449.9 °C
Decomposition Temperature:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Sources of ignition.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Sources of ignition.
Incompatible Materials:	Strong acids. Strong bases. Oxidizers.
Hazardous Decomposition Products:	Oxides of carbon. Oxides of sulphur. Hydrogen sulphide.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral:	Not available.
Dermal:	Not available.
Inhalation:	Not available.

Component Toxicity

Component	CAS No.	LD_{50} oral	LD_{50} dermal	LC_{50}
Propane	74-98-6	Not available.	Not available.	Not available.
Ethyl mercaptan	75-08-1	682 mg/kg, (rat)	Not available.	2770 ppm, (mouse), 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.

Symptoms (including delayed and immediate effects)

Inhalation: This product is an asphyxiant gas that can cause unconsciousness and/or death if oxygen levels are sufficiently reduced. May cause respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result.

Skin: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

Ingestion: Not a normal route of exposure.

Skin Sensitization: Not hazardous by OSHA/WHMIS criteria.

Respiratory Sensitization: Not hazardous by OSHA/WHMIS criteria.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Respiratory system. Blood. Liver. Kidneys. Nervous system.

Chronic Effects: Not available.

Carcinogenicity: Not hazardous by OSHA/WHMIS criteria.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Propane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.
Ethyl mercaptan	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.

Mutagenicity: Not hazardous by OSHA/WHMIS criteria.

Reproductive Effects: Not hazardous by OSHA/WHMIS criteria.

Developmental Effects

Teratogenicity: Not hazardous by OSHA/WHMIS criteria.

Embryotoxicity: Not hazardous by OSHA/WHMIS criteria.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Soil: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORTATION INFORMATION

DOT

Proper Shipping Name: UN1978, PROPANE, 2.1

Class: 2.1

UN Number: UN1978

Packing Group: Not applicable.

Label Code:



TDG

Proper Shipping Name: UN1978, PROPANE, 2.1

Class: 2.1

UN Number: UN1978

Packing Group: Not applicable.

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)
The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)
The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification: Class A - Compressed Gas.
Class B1 - Flammable Gases.

Hazard Symbols:



United States
This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Propane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Ethyl mercaptan	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000

State Regulations

Massachusetts
US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Propane	74-98-6	Listed.
Ethyl mercaptan	75-08-1	Listed.

Note: E = Extraordinarily Hazardous Substance

New Jersey
US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Propane	74-98-6	SHHS
Ethyl mercaptan	75-08-1	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania
US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Propane	74-98-6	Listed.
Ethyl mercaptan	75-08-1	Listed.

Note: E = Environmental Hazard; S = Special Hazardous Substance

California
California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.

Date of Preparation of SDS: June 4, 2012

Expiry Date (WHMIS): June 3, 2015

Version: 1.0

SDS Prepared by: **Deerfoot Consulting Inc.**
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