Shell Canada Limited

Material Safety Data Sheet

Effective Date: 2002-08-14
Supersedes: None

Class A Compressed Gas

Class B1 Flammable Gas

Class B2 Flammable Liquid

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT:	**CYLINDER PROPANE**
SYNONYMS:	Dimethylmethane
PRODUCT USE:	Fuel
MSDS Number:	251-202

MANUFACTURER
Shell Canada Limited
P.O. Box 100, Station M
400-4th Ave. S.W.
Calgary, AB Canada
T2P 2H5

TELEPHONE NUMBERS	
Shell Emergency Number	1-800-661-7378
CANUTEC 24 HOUR EMERGENCY NUMBER	613-996-6666
For general information:	1-800-661-1600
For MSDS information:	403-691-3982
(From 7:30 to 4:30 Mountain Time)	403-691-2220

This MSDS was prepared by the Toxicology and Product Stewardship Section of Shell Canada Limited.

*An asterisk in the product name designates a trade-mark(s) of Shell Canada Limited, used under license by Shell Canada Products.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS Number	% Range	WHMIS Controlled
Propane	74-98-6	>90	Yes
Propylene	115-07-1	<5	Yes
Hydrocarbons, C4 and up	68476-44-8	<2.5	Yes

See Section 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

Physical Description: Liquefied Compressed Gas Colourless Mercaptan Odor.

Routes of Exposure: Exposure will most likely occur through skin contact or inhalation.
Hazards:

Compressed Gas.
Flammable Gas.
Flammable Liquid.
The gas is an asphyxiant and may also have a mild narcotic effect.
Direct contact with liquefied gas can result in burns to skin and eyes.
Exposure to rapidly expanding gas may cause frost burns to the eyes. As a gas, is non-irritating to the eyes.
Exposure to rapidly expanding gas may cause frost burns to the skin. As a gas, is non-irritating to the skin.
At very high concentrations this product can have an anesthetic (drowsiness, weakness) and asphyxiant effect. As a gas, is non-irritating to the throat. While there is no evidence that exposure to industrially acceptable levels of hydrocarbons have produced cardiac effects in humans, animal studies have shown that inhalation of high vapour levels of low molecular weight hydrocarbons has produced cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms.

Handling: Eliminate all ignition sources.
Wear insulated gloves to avoid freezing burns from liquid.
Wear an approved respirator to prevent overexposure.
Bond and ground transfer containers and equipment to avoid static accumulation.
Empty containers are hazardous, may contain flammable / explosive dusts, liquid residue or vapours. Keep away from sparks and open flames.

For further information on health effects, see Section 11.

4. FIRST AID

Eyes: Flush eyes with water for at least 15 minutes while holding eyelids open. If frostbite or burn occurs, get medical attention.

Skin: If victim has received cold burns, treat by immersing in lukewarm water (32 to 43 deg C) for 30-45 minutes. Remove contaminated clothing unless stuck to a burn area in which case cut around it. Obtain medical attention as soon as possible after first aid has been initiated and completed.

Ingestion: Not applicable.

Inhalation: Remove victim from further exposure and restore breathing, if required. Obtain medical attention.

Notes to Physician: Inhalation of product may have a narcotic effect. Assess central nervous system and cardio-respiratory status.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Carbon Dioxide
Dry Chemical
Water Fog

Firefighting Instructions:	Extremely flammable. Vapour forms a flammable/explosive mixture with air between upper and lower flammable limits. Evacuate hazard area. Vapours may travel along ground and flashback along vapour trail may occur. Containers exposed to intense heat may rupture. Allow gas to burn if flow cannot be shut off safely. Use water fog to disperse vapours. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure buildup which could result in container rupture. Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure. Always stay away from ends of containers due to explosive potential. Fight fire from maximum distance. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus. Shut off source of gas.
Hazardous Combustion Products:	Carbon dioxide, carbon monoxide and unidentified organic compounds may be formed upon combustion.

6. ACCIDENTAL RELEASE MEASURES

Issue warning "Flammable". Evacuate personnel not equipped with protective clothing and NIOSH approved respiratory protection. Isolate hazard area and restrict access. Avoid direct contact with material. Stop leak only if safe to do so. Eliminate all ignition sources. Handling equipment must be grounded. Use water fog to knock down vapours; contain runoff.

7. HANDLING AND STORAGE

Handling:	Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Vapours may accumulate and travel to distant ignition sources and flashback. Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers are hazardous, may contain flammable/explosive dusts, residues or vapours. Do not pressurize drum containers to empty them. Hot surfaces may be sufficient to ignite liquid even in the absence of sparks or flames. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapours are gone. Vapours are heavier than air and will settle and collect in low areas and pits, displacing breathing air.
Storage:	Store cylinders upright, secured in position with cylinder valve cap on. Store in a cool, dry, well ventilated area, away from heat and ignition sources. Protect against physical damage to containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

THE FOLLOWING INFORMATION, WHILE APPROPRIATE FOR THIS PRODUCT, IS GENERAL IN NATURE. THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT WILL VARY DEPENDING ON THE CONDITIONS OF USE.

OCCUPATIONAL EXPOSURE LIMITS (Current ACGIH TLV/TWA unless otherwise noted):

Propane: 2500 ppm

Mechanical Ventilation:	Use explosion-proof ventilation as required to control vapour concentrations. Make up air should always be supplied to balance air exhausted (either generally or locally). For personnel entry into confined spaces (i.e. bulk storage tanks) a proper confined space entry procedure must be followed including ventilation and testing of tank atmosphere.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection:	Chemical safety goggles should be worn. Provide an eyewash station in the area.
Skin Protection:	Due to cryogenic properties of liquid product wear insulated gloves suitable for low temperatures, and coveralls. Safety showers should be available for emergency use.
Respiratory Protection:	Use a NIOSH-approved chemical cartridge respirator with organic vapour cartridges or use a NIOSH-approved supplied-air respirator. For high airborne concentrations, use a NIOSH-approved supplied-air respirator, either self-contained or airline breathing apparatus, operated in positive pressure mode.

9. PHYSICAL DATA

Physical State:	Liquefied Compressed Gas
Appearance:	Colourless
Odour:	Mercaptan Odor.
Odour Threshold:	Not available
Freezing/Pour Point:	<-188 degrees C
Boiling Point:	-42 degrees C
Density:	Not available
Vapour Density (Air = 1):	1.5
Vapour Pressure (absolute):	>400 mm Hg @ -56 degrees C
pH:	Not applicable
Flash Point:	Method Tag Closed Cup -104 degrees C
Lower Explosion Limit:	2.1 % (vol.)
Upper Explosion Limit:	9.5 % (vol.)
Autoignition Temperature:	432 degrees C
Viscosity:	Not applicable
Evaporation Rate (n-BuAc = 1):	Not available
Partition Coefficient (K_{ow}):	229
Water Solubility:	Slight
Other Solvents:	Alcohol, Ether
Molecular Weight:	44.1 grams
Formula:	CH3CH2CH3

10. STABILITY AND REACTIVITY

Chemically Stable:	Yes
Hazardous Polymerization:	No
Sensitive to Mechanical Impact:	No
Sensitive to Static Discharge:	Yes
Incompatible Materials:	Avoid strong oxidizing agents.
Conditions of Reactivity:	Avoid excessive heat, open flames and all ignition sources. May explode if ignited in an enclosed area.

11. TOXICOLOGICAL INFORMATION

Ingredient (or Product if not specified)	Toxicological Data
Propane	
Propylene	
Hydrocarbons, C4 and up	

Routes of Exposure: Exposure will most likely occur through skin contact or inhalation.
Irritancy: No irritation effects with the gas have been reported but in liquid form contact with skin or eyes may result in freezing burns.

12. ECOLOGICAL INFORMATION

Environmental Effects: Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident.
Biodegradability: Not available. Rapid volatilization.

13. DISPOSAL CONSIDERATIONS

Incinerate at a licenced waste disposal site with approval of environmental authority.

14. TRANSPORTATION INFORMATION

Canadian Road and Rail Shipping Classification:

UN Number	UN1075
Proper Shipping Name	LIQUEFIED PETROLEUM GAS
Hazard Class	Class 2.1 Flammable Gases
Shipping Description	LIQUEFIED PETROLEUM GAS Class 2.1 UN1075

15. REGULATORY INFORMATION

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

WHMIS Class: Class A Compressed Gas
Class B1 Flammable Gas
Class B2 Flammable Liquid
DSL/NDSL Status: This product, or all components, are listed on the Domestic Substances List, as required under the Canadian Environmental Protection Act. This product and/or all components are listed on the U.S. EPA TSCA Inventory.
Other Regulatory Status: No Canadian federal standards.

16. ADDITIONAL INFORMATION

LABEL STATEMENTS

Hazard Statement :	Compressed Gas. Flammable Gas. Flammable Liquid. The gas is an asphyxiant and may also have a mild narcotic effect. Direct contact with liquefied gas can result in burns to skin and eyes.
Handling Statement:	Eliminate all ignition sources. Wear insulated gloves to avoid freezing burns from liquid. Wear an approved respirator to prevent overexposure. Bond and ground transfer containers and equipment to avoid static accumulation. Empty containers are hazardous, may contain flammable / explosive dusts, liquid residue or vapours. Keep away from sparks and open flames.
First Aid Statement :	If overcome by vapours remove to fresh air. Treat freezing burns by immersing in lukewarm water. Obtain medical attention.
Revisions:	This MSDS has been reviewed and updated. Changes have been made to: Section 11 Section 14