



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Product Name</b>	<b>Alky Liquefied Petroleum Gas (Alky LPG)</b>
<b>Synonym(s)</b>	Compressed petroleum gas Liquefied Petroleum gas (LPG)
<b>CAS #</b>	Mixture
<b>Product use</b>	Fuel
<b>Manufacturer</b>	Irving Oil Refining G.P. Box 1260 Saint John, NB E2L 4H6 CA Phone: (506) 202-2000 Refinery: (506) 202-3000 Emergency Phone: 1-800-424-9300 (CHEMTREC)

## 2. Hazards Identification

<b>Emergency overview</b>	<b>DANGER</b> FLAMMABLE GAS. MAY CAUSE FLASH FIRE. Contents under pressure. Containers may explode when heated.
<b>Potential short term health effects</b>	
<b>Routes of exposure</b>	Eye, Skin contact, Inhalation.
<b>Eyes</b>	Contact with liquid may cause frostbite.
<b>Skin</b>	Contact with liquid may cause frostbite.
<b>Inhalation</b>	This product is an asphyxiant gas which can cause unconsciousness/death if OXYGEN levels are sufficiently reduced. Oxygen concentrations in work spaces must not be permitted to fall below 19%. Symptoms of overexposure may include and are not limited to rapid breathing, fatigue, incoordination, excessive salivation, headache, nausea, vomiting and disorientation.
<b>Ingestion</b>	Not a normal route of exposure. May cause stomach distress, nausea or vomiting.
<b>Target organs</b>	Eyes. Respiratory system. Skin.
<b>Chronic effects</b>	Prolonged or repeated exposure can cause drying, defatting and dermatitis.
<b>Signs and symptoms</b>	Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
<b>OSHA Regulatory Status</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
<b>Potential environmental effects</b>	See section 12.

## 3. Composition / Information on Ingredients

<b>Ingredient(s)</b>	<b>CAS #</b>	<b>Percent</b>
Butane	106-97-8	30 - 60
Propane	74-98-6	30 - 60
Ethane	74-84-0	1 - 5
Methane	74-82-8	1 - 5

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Immediately flush the contaminated eye(s) with lukewarm gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye (or face). Get medical attention immediately.
<b>Skin contact</b>	Clothing frozen to the skin should be thawed before being removed. Remove contaminated clothing. Treat for frostbite by gently warming affected area. Wash with soap and water. Obtain medical attention if irritation persists.
<b>Inhalation</b>	If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, trained personnel should administer CPR immediately.

<b>Ingestion</b>	Not a normal route of exposure. Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
<b>Notes to physician</b>	Symptoms may be delayed.
<b>General advice</b>	Do not puncture or incinerate container. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

## 5. Fire Fighting Measures

<b>Flammable properties</b>	Extremely Flammable by WHMIS criteria. Explosive gas is released when liquid evaporates.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Stop the flow of gas. Carbon dioxide. Dry chemical.
<b>Unsuitable extinguishing media</b>	Not available
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	It is extremely dangerous to extinguish the fire without stopping the flow of gas. Gas and air will mix resulting in an explosion which may be more destructive than the original fire. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back. May accumulate in confined spaces, resulting in an explosion and/or asphyxiation hazard. Contents under pressure. Pressurized container may explode when exposed to heat or flame.
<b>Protective equipment for firefighters</b>	Firefighters should wear full protective clothing including self contained breathing apparatus.
<b>Hazardous combustion products</b>	May include and are not limited to: Oxides of carbon. Smoke.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	Not expected to be sensitive to mechanical impact.
<b>Sensitivity to static discharge</b>	Accumulates static charge by flow or agitation. Ignites in response to static charge of sufficient energy.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
<b>Methods for containment</b>	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
<b>Methods for cleaning up</b>	Evacuate area and keep it isolated until all gas is dispersed. Remove all sources of ignition. Ventilate area. Stop leak if it can be done safely. Water spray may be used to dissipate.

## 7. Handling and Storage

<b>Handling</b>	Use good industrial hygiene practices in handling this material. Non-sparking equipment. Explosion-proof ventilation. Intrinsically safe electrical equipment. Ground and bond containers when transferring material. Have clean emergency eye wash and shower available in work area. Use only with adequate ventilation. When using do not eat or drink. Avoid contact with skin and clothing. Avoid contact with eyes.
<b>Storage</b>	Store in a cool well-ventilated area. Consider leak detection and alarm equipment for storage area. Keep away from heat, open flames, other sources of ignition, or strong oxidizing agents.  Shipping: Load at normal temperature (up to 38°C) and pressure. Bond and ground containers for transfer.

## 8. Exposure Controls / Personal Protection

Exposure limits Ingredient(s)	Exposure Limits
Butane	<b>ACGIH-TLV</b> TWA: 1000 ppm <b>OSHA-PEL</b> Not established
Ethane	<b>ACGIH-TLV</b> TWA: 1000 ppm <b>OSHA-PEL</b> Not established
Methane	<b>ACGIH-TLV</b> TWA: 1000 ppm <b>OSHA-PEL</b> Not established
Propane	<b>ACGIH-TLV</b> TWA: 1000 ppm <b>OSHA-PEL</b> TWA: 1000 ppm
<b>Engineering controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Oxygen concentrations in work spaces must not be permitted to fall below 19%.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Face shield or chemical goggles.
<b>Hand protection</b>	Insulated gloves. Nitrile rubber or Responder™.
<b>Skin and body protection</b>	As required by employer code. Clothing and Footwear: Impervious protective clothing for total skin coverage when working with liquid product.
<b>Respiratory protection</b>	For confined spaces, wear a NIOSH-approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands and face before breaks and immediately after handling the product.

## 9. Physical and Chemical Properties

<b>Appearance</b>	gaseous. May be liquefied by pressurization.
<b>Color</b>	Clear
<b>Form</b>	Gaseous. May be liquefied by pressurization.
<b>Odor</b>	slight petroleum
<b>Odor threshold</b>	22,000 - 36,000 mg/m <sup>3</sup>
<b>Physical state</b>	Gas
<b>pH</b>	Not applicable
<b>Melting point</b>	Not available
<b>Freezing point</b>	-310.00 °F (-190 °C) (Propane)
<b>Boiling point</b>	-40.00 - 176.00 °F (-40 - 80 °C)
<b>Pour point</b>	Not available
<b>Evaporation rate</b>	Not applicable
<b>Flash point</b>	-155.20 °F (-104 °C) Closed Cup
<b>Auto-ignition temperature</b>	842.00 °F (450 °C)

<b>Flammability limits in air, lower, % by volume</b>	1.8 (butane)
<b>Flammability limits in air, upper, % by volume</b>	9.5
<b>Vapor pressure</b>	853 KPa (8.3 Atm) @ 21°C
<b>Vapor density</b>	1.55 (Propane) (Air=1)
<b>Specific gravity</b>	0.5 @ 20°C (liquid propane)
<b>Octanol/water coefficient</b>	2.36 [log p (oct)]
<b>Viscosity</b>	Not available
<b>Percent volatile</b>	100 %

## 10. Stability and Reactivity

<b>Reactivity</b>	This product may react with strong oxidizing agents.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Heat, open flames, static discharge, sparks and other ignition sources. Aerosol containers are unstable at temperatures above 49°C (120.2°F).
<b>Incompatible materials</b>	Oxidizers.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of carbon.

## 11. Toxicological Information

### Component analysis - LC50

Ingredient(s)	LC50
Butane	Not available
Ethane	658 mg/l/4h rat
Methane	Not available
Propane	Not available

### Component analysis - Oral LD50

Ingredient(s)	LD50
Butane	Not available
Ethane	Not available
Methane	Not available
Propane	Not available

### Effects of acute exposure

<b>Eye</b>	Contact with liquid may cause frostbite.
<b>Skin</b>	Contact with liquid may cause frostbite.
<b>Inhalation</b>	This product is an asphyxiant gas which can cause unconsciousness/death if OXYGEN levels are sufficiently reduced. Oxygen concentrations in work spaces must not be permitted to fall below 19%. Symptoms of overexposure may include and are not limited to rapid breathing, fatigue, incoordination, excessive salivation, headache, nausea, vomiting and disorientation.
<b>Ingestion</b>	Not a normal route of exposure. May cause stomach distress, nausea or vomiting.
<b>Sensitization</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Chronic effects</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Carcinogenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Mutagenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Reproductive effects</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Teratogenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Name of Toxicologically Synergistic Products</b>	Simple asphyxiants (chemicals that displace air in confined spaces).

## 12. Ecological Information

<b>Ecotoxicity</b>	Not available
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Persistence / degradability	Not available
Bioaccumulation / accumulation	Not available
Mobility in environmental media	Not available
Environmental effects	Not available
Aquatic toxicity	Not available
Partition coefficient	2.36 [log p (oct)]
Chemical fate information	Not available
Other adverse effects	Not available

### 13. Disposal Considerations

Disposal instructions	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

### 14. Transport Information

#### U.S. Department of Transportation (DOT)

**Basic shipping requirements:**

Proper shipping name	Petroleum gases, liquefied
Hazard class	2.1
UN number	UN1075

**Additional information:**

Special provisions	T50
Packaging exceptions	306
ERG number	115



#### Transportation of Dangerous Goods (TDG - Canada)

**Basic shipping requirements:**

Proper shipping name	PETROLEUM GASES, LIQUEFIED
Hazard class	2.1
UN number	UN1075



### 15. Regulatory Information

**Canadian federal regulations** 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.

**Canada - CEPA - High Priority Chemicals as Identified by DSL Categorization**

Butane 106-97-8 Batch 4, published November 17, 2007

**Canada - CEPA - Schedule I - List of Toxic Substances**

Methane 74-82-8 Present

**Canada - WHMIS - Ingredient Disclosure List**

Butane 106-97-8 1 %

**WHMIS status** Controlled

**WHMIS classification** Class A - Compressed Gas, Class B - Division 1 - Flammable Gas

**WHMIS labeling**



**Occupational Safety and Health Administration (OSHA)**

29 CFR 1910.1200 hazardous chemical Yes

**US Federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**CERCLA (Superfund) reportable quantity**

None

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**  
 Immediate Hazard - Yes  
 Delayed Hazard - No  
 Fire Hazard - Yes  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes

**Clean Air Act (CAA)** Not available

**Clean Water Act (CWA)** Not available

**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances**

Butane 106-97-8 Present

**U.S. - Massachusetts - Right To Know List**

Butane 106-97-8 Present  
 Ethane 74-84-0 Present  
 Methane 74-82-8 Present  
 Propane 74-98-6 Present

**U.S. - Minnesota - Hazardous Substance List**

Butane 106-97-8 Present  
 Ethane 74-84-0 Simple asphyxiant  
 Methane 74-82-8 Simple asphyxiant  
 Propane 74-98-6 Simple asphyxiant

**U.S. - New Jersey - Right to Know Hazardous Substance List**

Butane 106-97-8 sn 0273  
 Ethane 74-84-0 sn 0834  
 Methane 74-82-8 sn 1202  
 Propane 74-98-6 sn 1594

**U.S. - Pennsylvania - RTK (Right to Know) List**

Butane 106-97-8 Present  
 Ethane 74-84-0 Present  
 Methane 74-82-8 Present  
 Propane 74-98-6 Present

**U.S. - Rhode Island - Hazardous Substance List**

Butane 106-97-8 Toxic; Flammable  
 Ethane 74-84-0 Toxic  
 Methane 74-82-8 Toxic  
 Propane 74-98-6 Toxic; Flammable

**Inventory name**

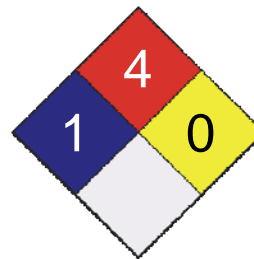
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

## 16. Other Information

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 1
Flammability	4
Physical Hazard	0
Personal Protection	X



### Disclaimer

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31-Aug-2015

### Prepared by

Dell Tech Laboratories Ltd. (519) 858-5021

### Other information

For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.

This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.

## Alky Liquefied Petroleum Gas (Alky LPG)



Compressed gas. Flammable gas.

Do not puncture or incinerate container. Do not store at temperatures above 49°C. Avoid contact with eyes and skin. Wear insulated, Nitrile rubber or Responder™ gloves and face shield or chemical goggles. Keep out of reach of children.

**EYE:** Immediately flush the contaminated eye(s) with lukewarm gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye (or face). Get medical attention immediately.

**SKIN:** Clothing frozen to the skin should be thawed before being removed. Remove contaminated clothing. Treat for frostbite by gently warming affected area. Wash with soap and water. Obtain medical attention if irritation persists.

**INHALATION:** If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, trained personnel should administer CPR immediately.

**INGESTION:** Not a normal route of exposure. Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

READ MATERIAL SAFETY DATA SHEET BEFORE USING PRODUCT

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Gaz comprimés. Gaz inflammable.

Ne pas percer ni incinérer le contenant. Ne pas entreposer à températures dépassant 49°C. Éviter le contact avec les yeux et la peau. Porter des gants isolés, en caoutchouc nitrile, Responder™ et des lunettes de shield ou de produit chimique de visage. Tenir hors de la portée des enfants.

**YEUX:** Laver immédiatement l'œil contaminé ou les yeux contaminés en laissant couler l'eau tiède pendant au moins 30 minutes, tout en maintenant le ou les paupières ouvertes. Lors du rinçage, prendre garde de ne pas contaminer l'œil non affecté ou le visage avec de l'eau contaminée. Obtenir une assistance médicale immédiate.

**PEAU:** Dégeler les vêtements gelés sur la peau avant de les retirer. Retirer les vêtements contaminés. Traiter les gelures par chauffage doux de la peau affectée. Laver à l'eau et au savon. Obtenir de l'attention médicale si l'irritation persiste.

**INHALATION:** En cas de symptômes, placer la victime à l'air frais. Si les symptômes persistent, obtenir de l'attention médicale. Si la victime ne respire pas du personnel qualifié devrait immédiatement commencer la réanimation cardio-pulmonaire.

**INGESTION:** N'est pas une voie d'exposition habituelle. Ne pas provoquer le vomissement. Ne jamais rien faire boire ou avaler à une victime inconsciente, ou si la victime a des convulsions. Appeler un médecin.

LIRE LA FICHE SIGNALÉTIQUE AVANT D'UTILISER CE PRODUIT