



MATERIAL SAFETY DATA SHEET

Product Name:
LPG (3560)

SECTION 1 – PRODUCT IDENTIFICATION AND USE

Product name	Liquefied petroleum gas (LPG)	PIN #	UN1075
Chemical name	Liquefied petroleum gas (LPG)	TDG, DOT class	2.1
Common names and synonyms	Compressed petroleum gas	Packing group	None
Product use	Fuel, chemical intermediate	Shipping name	Liquefied petroleum gases; or Petroleum gases, liquefied
WHMIS classification	Compressed Gas Class A Flammable Gas Class B, Division 1		
Hazard codes	NFPA Health 2 Flammability 4 Reactivity 0	HMIS Health 0 Flammability 4 Reactivity 0	

NFPA & HMIS Ratings: 0=Insignificant/No Hazard. 1=Slight Hazard. 2=Moderate Hazard. 3=High/Serious Hazard. 4=Extreme/Severe Hazard.

Supplier	Irving Oil Limited, Refining Division Box 1260, Saint John New Brunswick Canada E2L 4H6	Phone	(506) 202-2000
		Emergency (Chemtrec)	1-800-424-9300
		Refinery	(506) 202-3000

SECTION 2 – HAZARDOUS INGREDIENTS

Ingredients	CAS#	Concentration (wt %)	ACGIH-TLVs (2008) (ppm)	OSHA PELs (ppm)	NIOSH RELs (ppm)	LD ₅₀ (rat, oral)	LC ₅₀ (rat, 4 hr)
LPG, which includes:	68476-85-7	100	1000 TWA	1000 TWA	1000 TWA	Not applicable	Not
Propane	74-98-6	>90	1000 TWA	1000 TWA	1000 TWA	Not applicable	Not
Butanes	106-97-8	Up to 2.5	1000 TWA	Not available	800 TWA	Not applicable	27.6%

SECTION 3 – PHYSICAL DATA

Form	Gas. May be liquefied by pressurization	Vapour pressure	855 kPa (8.4 atm) at 21°C
Colour	Colourless	Evaporation rate	Not applicable (gas)
Odour	Very faint petroleum odour	Boiling point	-44°C to 1°C (-47°F to 34°F)
Odour	5,000 to 20,000 ppm	Freezing point	-190°C (-310°F) (propane)
Specific gravity	Not applicable (gas)	pH	Not applicable
Vapour density	1.45 (air = 1)	Coefficient of water/oil distribution	2.36 [log P (oct)]

SECTION 4 - FIRE AND EXPLOSION HAZARDS

Flammability	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Conditions	Extremely flammable, explosive gas is released when liquid evaporates.
Flash point	Not applicable (flammable gas)	Auto ignition temperature	450°C (842°F)
Lower flammable limit	1.8% (butane)	Upper flammable limit	9.5% (propane)
Explosion data. Sensitivity to:	Impact Not considered to be sensitive	Static discharge	Accumulates static charge by flow or agitation. Ignites in response to static charge of sufficient energy.
Means of extinction	Stop flow. CO ₂ or dry chemical		
Special precautions	It is extremely dangerous to extinguish fire without stopping flow of gas. Gas and air will mix; resultant explosion could be more destructive than the original fire. Gas is slightly heavier than air. It may travel a considerable distance to a source of ignition and flash back to a leak. Can accumulate in confined spaces, resulting in an explosion and/or asphyxiation hazard. Heating can cause rapid build-up of pressure inside containers, which may rupture explosively.		
Hazardous combustion products	Smoke. Carbon dioxide. Carbon monoxide.		

SECTION 5 – REACTIVITY INFORMATION

Stability	Stable
Conditions to avoid	Sources of ignition. Static discharges. High temperatures.
Incompatible substances	May react with strong oxidizing materials. Halogens (chlorine, bromine).
Hazardous decomposition products	Carbon dioxide. Carbon monoxide.



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SECTION 6 – HEALTH HAZARD INFORMATION

Route of Entry	<input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Ingestion <input type="checkbox"/> Skin absorption	Hazardous Contact (with liquid form)	<input checked="" type="checkbox"/> Eye <input checked="" type="checkbox"/> Skin
Acute exposure	Contact with liquid will cause freeze injury to eyes or skin. High gas concentrations (% range) can cause asphyxiation by displacing air and thereby reducing the oxygen available for breathing. Symptoms include rapid breathing, fatigue, incoordination, headache, nausea, vomiting and disorientation. Oxygen concentrations in work spaces must not be permitted to fall below 19.5%. Cardiac sensitization: Heartbeat irregularities in the presence of adrenalin. Very high concentrations (10,000 ppm) can cause central nervous system (CNS) depression with symptoms such as headache, nausea, dizziness, drowsiness and confusion.		
Chronic exposure	Not known to cause chronic effects.		
Carcinogenicity	Not known to cause cancer. Not identified by ACGIH, IARC, NTP or OSHA as a carcinogen.	Mutagenicity	Not known to be mutagenic
Teratogenicity	Not available	Irritancy	Does not cause irritation
		Sensitization	Weak cardiac sensitizer
		Reproductive toxicity	Not known to cause reproductive effects
Toxicologically synergistic products	Simple asphyxiants (chemicals that displace air in confined spaces) are expected to produce additive effects.		

SECTION 7 – FIRST AID

Inhalation	Move affected person to fresh air or remove source of contamination. Give artificial respiration if breathing has stopped and if a qualified AR administrator is available. Get medical help immediately.
Ingestion	Gases do not enter the body by this route.
Eye	Flush eye with lukewarm, gently flowing fresh water until product is removed. Do not attempt to re-warm. Cover both eyes with sterile dressing. Do not permit affected person to drink alcohol or smoke. Quickly transport affected person to an emergency medical facility.
Skin	Briefly flush the affected area with lukewarm, gently flowing water until the product is removed. Do not attempt to re-warm the affected area. Do not rub the affected area or apply dry heat. Carefully cut around clothing that sticks to the skin and remove the remainder of the garment. Loosely cover the affected area with a sterile dressing. Do not permit affected person to drink alcohol or smoke. Quickly transport affected person to an emergency medical facility.

SECTION 8 – PRECAUTIONARY MEASURES

Personal Protective Equipment	Gloves Insulated; preferably neoprene, nitrile, Tychem™, or Responder™ Eye Chemical safety glasses with face shield for working with the liquid product. Respiratory NIOSH-approved SCBA or air line respirator with escape cylinder for work in confined spaces where oxygen deficiency may occur. A qualified occupational health and safety professional should be consulted for advice on respirator selection.
Engineering controls	Clothing & footwear Impervious protective clothing for total skin coverage when working with liquid product.
Handling procedures & equipment	Enclose product to the greatest extent possible. Use appropriate measures to ensure that oxygen concentrations do not fall below 19.5%. Eliminate all ignition sources. Use non-sparking equipment, explosion-proof ventilation systems, and intrinsically safe electrical equipment. Bond and ground containers during product transfer. Have clean emergency eyewash and shower readily available in the work area.
Leak & spill procedure	Evacuate area and keep it isolated until all gas has dispersed. Eliminate all sources of ignition. Ventilate area. Stop leak if it can be done safely. Water spray may be used to dissipate gas.
Waste disposal	Consult local authorities. Controlled release to air may be permitted in certain situations.
Storage	Store in a cool, well-ventilated area. Keep away from strong oxidizing materials, excessive heat, and sources of ignition. Use non-sparking equipment, and explosion-proof ventilation systems. Consider leak detection and alarm equipment for storage area.
Shipping	Bond and ground containers for transfer.

SECTION 9 – PREPARATION DATE OF MSDS

Prepared by	D. Smith for Irving Oil Refinery	Phone	(506) 202-3000
Revision date	September 15, 2008	To re-order MSDS, phone	(506) 202-2000