

MATERIAL SAFETY DATA SHEET

WHMIS CLASSIFICATION

Class A - Compressed Gas

Class B1 - Flammable Gas

Class B2 - Flammable Liquid

TDG CLASSIFICATION

PIN Number: **UN1075**
Primary Class: **2.1**
Secondary Class: **N/A**
Packing Group: **Not Available**
Shipping Name: **Natural Gas Liquid**

Canutec Emergency Telephone Number: (613) 996-6666

SECTION 1 – PRODUCT IDENTIFICATION

Name: **Natural Gas Liquid** **Manufacturer's/ Supplier's Name:** **Vero Energy Inc.**

Use: Feedstock, fuel **Address:** **1400 - 333 – 5th Avenue SW
Calgary, Alberta
T2P 3B6**

Description: Natural gas liquids including butane, propane, pentane, hexane, heptane, and small amounts of methane and ethane. Remains liquid with low temperatures or pressure. **Phone Number:** **(403) 218-2063
Toll Free
1-866-709-8376 (Vero)**

SECTION 2 – HEALTH HAZARD INFORMATION

Exposure Limits: **OEL (8 hours/1000ppm)** **TLV – Not Available**
(OHS Code – June 2009, 3rd Edition)

NGL: **Primarily a simple asphyxiant with low toxicity at 17,000ppm for butane.**

Inhalation: Irritation, nausea, vomiting, headache, drowsiness, symptoms of drunkenness, tingling sensation, suffocation, convulsion, coma.

Skin Contact: Blisters, frostbite.

Eye Contact: Blurred vision, frostbite.

Ingestion: Frostbite.

Toxicological Data: **Oral Toxicity (rats):** Not applicable.
(acute toxicity) **Dermal Toxicity (rabbits):** Not available.
Inhalation Toxicity (humans): 17,000ppm for butane.
Target Organs: Central nervous system.

SECTION 3 – PREVENTATIVE MEASURES

Personal Protective Equipment:	Use positive pressure self-contained breathing apparatus or supplied air breathing apparatus when entering areas where high concentrations may be present.
Eye Protection:	Splash goggles and face shield if SCBA or SABA not worn.
Hand Protection:	Insulated gloves.
Protective Clothing:	Fire resistant coveralls and insulating clothing.
Respiratory Protection:	SCBA or SABA.
Ventilation:	Use only in well ventilated areas. Mechanical ventilation recommended in confined areas. Equipment must be explosion proof.
Handling Procedures and Equipment:	Avoid contact with liquid or liquid cooled equipment. Avoid inhalation. Bond and ground all transfers. Avoid sparking conditions.
Storage:	Store in pressurized vessels, away from heat and ignition sources.
Shipping:	Ship in appropriate pressure equipment.
Leaks or Spills:	Protect from any ignition source, keep away from heat, fire, sparks, or flame. Ventilate area well. Avoid accumulation of vapour at low levels.

SECTION 4 – FIRST AID MEASURES

Inhalation:	Remove to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention.
Skin Contact:	Frostbite: If freeze burn occurs, gently rinse the area in warm water (38 – 43 °C). Do not remove clothing. Do not rub. Get medical attention.
Eye Contact:	Immediately flush with large amounts of luke warm water for 15 minutes, lifting upper and lower lids at intervals. Seek medical attention if irritation persists.
Ingestion:	Usually no effect by this route.

SECTION 5 – HAZARDOUS INGREDIENTS

Components	% (Volume)	CAS Number
Butane (n/iso)	49-61%	106-97-8
Pentane (n/iso)	22-27%	109-66-0
Hexane	5-9%	110-54-3
C7+	4-7%	-
Propane	4-6%	74-98-6
Ethane	0-1.7%	74-84-0
H2S	0%	15117-53-0
CO2	<1%	85540-96-1

SECTION 6 – PHYSICAL DATA

Physical State:	Gas/Liquid	Evaporation Rate: (n-butyl acetate = 1)	Gas
Odour and Appearance:	Clear, colourless, odourless liquid that evaporates quickly into a gas	Boiling Point:	- 5 °C (Butane)
Odour Threshold: (PPM):	Not Applicable	Freezing Point:	- 135 °C (Butane)
Vapour Pressure: (@37.8 degrees C)	286 kPa	pH:	Not Applicable
Relative Density: (@ 15 degrees C)	0.595	Specific Gravity:	0.58
Solubility in Water:	Less than 0.15% by weight @70F		

SECTION 7 – REACTIVITY DATA

Stability:	Stable.
Incompatibility with Other Substances:	Chlorine and other strong oxidizing agents.
Conditions to Avoid:	Contact with sparks, open flame or any source of ignition.
Hazardous Decomposition Products:	May produce carbon monoxide.

SECTION 8 – FIRE AND EXPLOSION DATA

Flashpoint and Method Used:	-60 °C approx.
Auto-ignition Temperature:	>400 °C.
Flammable Limits in Air: (% by Volume)	LEL% 1.8 UEL% 8.5
Sensitivity to Impact:	Not Applicable.
Sensitivity to Static Discharge:	May ignite.
Fire and Explosion Hazards:	This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapour (fumes) which can catch fire and burn with explosive violence. Invisible vapour spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus against the hazardous effects of normal products of combustion of oxygen deficiency. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources, causing an explosive flashback.

Extinguishing Agents: Foam, CO₂, dry chemical. Explosive accumulations can build up in areas of poor ventilation.

Fire Fighting Procedures: Avoid possible accumulations of vapours at floor level, as vapour is heavier than air. Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals.

This product is extremely flammable at all times. Keep away from any sources of inadvertent ignition, including heat, fire, sparks, or flame.

Hazardous Combustion Products: Carbon Monoxide (CO).

SECTION 9 – PREPARATION INFORMATION

Prepared by: SDS Consulting Corporation

Issued by: Vero Energy Inc.
#1400, 333 – 5th Avenue SW
Calgary, Alberta
T2P 3B6

Telephone Number: (403) 218-2063
Toll Free
1-866-709-8376 (Vero)

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Supersedes: Not Applicable

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