

**SECTION 1 – MATERIAL IDENTIFICATION AND USE****Material Name:** BUTANE (NORMAL)**Use:** Process stream, sales**WHMIS Classification:** Class A; Class B, Div. 1**Fire:** 4      **Reactivity:** 0      **Health:** 1**TDG:**      **UN:** 1075      **Class:** 2.1      **Packing Group:** N.Av.**Shipping Name:** LIQUEFIED PETROLEUM GASES**Manufacturer/Supplier:** ENCANA CORPORATION

#1800, 855 - 2 Street S.W.,

CALGARY, ALBERTA, T2P 2S5

**Emergency Telephone:** 403-645-3333**Chemical Family:** Aliphatic paraffinic hydrocarbon**SECTION 2 – HAZARDOUS INGREDIENTS OF MATERIAL**

<b>Hazardous Ingredients</b>	<b>Approximate Concentrations %</b>	<b>C.A.S. Nos.</b>	<b>LD50/LC50 Specify Species &amp; Route</b>	<b>Exposure Limits</b>
n-Butane	95 - 98	106-97-8	N.Av./inh rat 4hrs 658 g/m3	1000 ppm (OEL) 1000 ppm (TLV <sup>1</sup> )
Isobutane	1 - 3	75-28-5	N.Av.	1000 ppm (TLV <sup>1</sup> )

OEL = 8 hr. Alberta Occupational Exposure Limit

TLV = Threshold Limit Value (8 hrs)

<sup>1</sup> As Aliphatic hydrocarbon gases**SECTION 3 – PHYSICAL DATA FOR MATERIAL****Physical State:** Gas**Specific Gravity:** 0.59**Vapour Density (air=1):** 2**Percent Volatiles, by volume:** 100**Odour & Appearance:** colorless, odourless (or may have mercaptan odour)**Freezing Pt. (deg.C):** -138**pH:** N.App.

(N.AV. = not available    N.App. = not applicable)

**Vapour Pressure (kPa):** 377**Odour Threshold (ppm):** N.Av.**Evaporation Rate:** N.Av.**Boiling Pt. (deg.C):** -1**Coefficient of Water/Oil Distribution:** <0.1**SECTION 4 – FIRE AND EXPLOSION****Flammability:** Yes      **Conditions:** Material will ignite at normal temperatures.**Means of Extinction:** Foam, CO2, dry chemical. Explosive accumulations can build up in areas of poor ventilation.**Special Procedures:** Use water spray to cool fire-exposed containers, and to disperse gas if leak has not ignited. If safe to do so, cut off fuel and allow flame to burn out.**Flash Point (deg.C) & Method:** -60**Upper Explosive Limit (% by vol.):** 8.4**Lower Explosive Limit (% by vol.):** 1.8**Auto-Ignition Temp. (deg.C):** 405**Hazardous Combustion Products:** Carbon monoxide**Sensitivity to Impact:** No**Sensitivity to Static Discharge:** Yes, may ignite**TDG Flammability Classification:** 2.1

## SECTION 5 – REACTIVITY DATA

**Chemical Stability:** Yes                      **Conditions:** N.App.  
**Incompatibility:** Yes                      **Substances:** Chlorine and other strong oxidizing agents.  
**Reactivity:** Yes                              **Conditions:** Heat, strong sunlight  
**Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide

## SECTION 6 – TOXICOLOGICAL PROPERTIES OF PRODUCT

### Routes of Entry:

**Skin Absorption:** N.Av.                      **Skin Contact:** Yes (liquid)                      **Eye Contact:** Yes  
**Inhalation:** Acute: Yes                      **Chronic:** N.Av.                                      **Ingestion:** No

**Effects of Acute Exposure:** Inhalation can cause headache, disorientation, dizziness, drowsiness and possibly unconsciousness. Evidence exists that butane can cause these effects at concentrations far below those required for oxygen deficiency, for example 10% LEL and above. As concentration increases, oxygen deficiency and asphyxiation may occur.

Rapidly expanding gas or vaporized liquid may cause frostbite to skin and eyes.

**Effects of Chronic Exposure:** N.Av.

**Sensitization to Product:** No.

**Exposure Limits of Product:** 1000 ppm (8 hour OEL), 1000 ppm (TLV-TWA)

**Irritancy:** N.Av.

**Synergistic Materials:** None reported

**Carcinogenicity:** No                      **Reproductive Effects:** No                      **Teratogenicity:** No                      **Mutagenicity:** No

## SECTION 7 – PREVENTIVE 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.

**Gloves:** Insulated gloves                      **Respiratory Protection:** SCBA or SABA                      **Eye:** Splash goggles and face shield if SCBA or SABA not worn.

**Footwear:** As per safety policy                      **Clothing:** As per fire protection policy

**Engineering Controls:** Use only in well ventilated areas. Mechanical ventilation recommended in confined areas. Equipment must be explosion proof.

**Leaks & Spills:** If safe to do so, stop gas flow. Remove all ignition sources. Provide clearing ventilation if possible. Prevent from entering confined spaces. Use personal protective equipment.

**Waste Disposal:** Controlled burning or venting in accordance with regulatory requirements.

**Handling Procedures & Equipment:** Avoid contact with liquid or liquid cooled equipment. Avoid inhalation. Bond and ground all transfers. Avoid sparking conditions.

**Storage Requirements:** Store in a cool, dry, well ventilated area away from heat, strong sunlight, and ignition sources.

**Special Shipping Information:** N.Av.

## SECTION 8 – FIRST AID MEASURES

**Skin:** If freeze burn occurs, gently bathe affected area in warm water (38 – 43) deg.C. Do not rub. Get medical attention.

**Eye:** 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.

**Inhalation:** Remove to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention.

**Ingestion:** Usually no effect by this route.

## SECTION 9 – PREPARATION DATE OF MSDS

Prepared By: EnCana Environment, Health and Safety (EHS)

Phone Number: (403) 645-2000                      Preparation Date: July 1, 2011                      Expiry Date: July 1, 2014