



Material Safety Data Sheet (Canada) Natural Gas (Sour)

Section 1 – Material Identification and Use

Material Name: NATURAL GAS (SOUR)
Use: Process stream, sales gas
WHMIS Classification: Class A; Class B, Div. 1; Class D, Div. 1, Subdiv. A
TDG: UN: 1953 **Class:** 2.3 **Subsidiary class/Division:** (2.1) **Packing Group:** N.Av.
Shipping Name: COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S. (contains hydrogen sulphide)
Manufacturer/Supplier: ENCANA CORPORATION
500 Centre Street SE
CALGARY, ALBERTA, T2P 2S5
Emergency Telephone: CANUTEC: 1-613-996-6666
Chemical Family: Mixture of light paraffin hydrocarbon gases, and hydrogen sulphide

Section 2 – Hazardous Ingredients of Materials

Hazardous Ingredients	Approximate Concentrations %	C.A.S. Nos.	LD50/LC50 Specify Species & Route	Exposure Limits
Methane	70-90	74-82-8	N.Av.	1000 ppm (BC)
Ethane	<1-15	74-8-40	N.Av.	1000 ppm (AB & BC)
Butane	<1-10	106-97-8	LC50, rat, 4 hrs, 658 g/m ³	1000/ 600 (750) ppm (AB & TLV/ BC (STEL))
Propane	<1-10	74-9-86	N.Av.	1000 ppm (AB & BC)
Hydrogen Sulphide	0.1-20	7783-06-04	LC50, rat, 4 hrs, 444 ppm	10(c)/15(c) /1 (5) ppm (BC/AB/TLV (STEL))

All exposure levels are 8-hour time-weighted exposure limits unless otherwise indicated. STEL is a short-term exposure limit over a 15 minute time-weighted average. Ceiling exposure limit denoted by (c).

Section 3 – Physical Data for Material

Physical State: Gas **Vapour Pressure:** Gas (usually 300–600 psi in pipeline)
Specific Gravity: 0.3 – 0.6 **Odour Threshold (ppm):** N.Av.
Vapour Density (air=1): 0.5 – 0.94 **Evaporation Rate:** N.Av.
Percent Volatiles, by volume: 100 **Boiling Pt. (deg.C):** -150
pH: N.App. **Freezing Pt. (deg.C):** -180
Coefficient of Water/Oil Distribution: <0.1 **Odour & Appearance:** colorless, rotten eggs odour
(N.AV. = not available N.App. = not applicable)

Section 4 – Fire and Explosion

Flammability: Yes **Conditions:** Product 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): <-150 to 190
Upper Explosive Limit (% by vol.): 46 **Sensitivity to Impact:** No
Lower Explosive Limit (% by vol.): 3 **Sensitivity to Static Discharge:** Yes, may ignite
Auto-Ignition Temp. (deg.C): 285-537 **TDG Flammability Classification:** 2.1
Hazardous Combustion Products: Carbon monoxide, carbon dioxide and sulfur dioxide

Section 5 – Reactivity Data

Chemical Stability: Yes **Conditions:** N.App.
Incompatibility: Yes **Substances:** Oxidizing agents (eg. chlorine), may react with iron to form iron sulphides.
Reactivity: Yes **Conditions:** Heat, strong sunlight
Hazardous Decomposition Products: Hydrogen sulphide



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Section 6 – Toxicological Properties of Product

Routes of Entry:

Skin Absorption: No

Skin Contact: Yes

Eye Contact: Yes

Inhalation: Acute: Yes

Chronic: Yes

Ingestion: No

Effects of Acute Exposure: Initial detection of H₂S odour at about 0.1 ppm. Irritation of eyes, nose and throat occurs. Hydrogen sulphide may cause loss of sense of smell at about 100 ppm H₂S. At higher concentrations lung irritation, drowsiness, unconsciousness, respiratory failure, and possible death can occur. Eye contact may cause irritation and swelling. Rapidly expanding gas or vaporized liquid may cause frostbite to skin and eyes.

Effects of Chronic Exposure: N.Av.

Sensitization to Product: No.

Irritancy: Skin and eyes

Synergistic Materials: None reported

Carcinogenicity: N.Av.

Reproductive Effects: N.Av.

Teratogenicity: N.Av.

Mutagenicity: N.Av.

Section 7 – Preventative Measures

Personal Protective Equipment: Use a NIOSH-approved positive pressure self-contained breathing apparatus or supplied air breathing apparatus when entering areas where overexposure may occur. Use approved gas detectors to assist in the detection and management of both H₂S and combustible gas.

Gloves: Insulated gloves

Respiratory: SCBA or SABA

Eye: Full facepiece SCBA or SABA

Footwear: As per safety policy **Clothing:** Fire retardant garments that meet NFPA 2112.

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 appropriate personal protective equipment. Contact applicable regulatory authorities.

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

Handling Procedures & Equipment: Avoid inhalation. Bond and ground all transfers. Avoid sparking conditions. Exposure controls to prevent overexposure and those that are detailed in the Canadian Association of Petroleum Producers publication entitled "Occupational Health and Safety of Hydrogen Sulphide (H₂S)" are recommended. Iron sulphides may be present, which are pyrophoric and must be kept wet to prevent ignition.

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

Special Shipping Information: See Special Provisions 16 and 38 in TDG Regulations.

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: Ensuring own safety, remove victim to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek immediate medical attention.

Ingestion: N.App.

Section 9 – Preparation Date of MSDS

Prepared By: Encana Environment, Health and Safety (EH&S)

Phone Number: (403) 645-2000 Preparation Date: July 1, 2014 Expiry Date: July 1, 2017