



## Material Safety Data Sheet (Canada) Condensate (Sour)

### Section 1 – Material Identification and Use

**Material Name:** CONDENSATE (SOUR)  
**Use:** Process stream, fuels production  
**WHMIS Classification:** Class B, Div. 2; Class D, Div. 1, Sub-Div. A; Class D, Div. 2, Sub-Div. A and B  
**TDG:** UN: 3494 **Class:** 3 **Subsidiary class/Division:** (6.1)  
**Packing Group:** I (Boiling Point  $\leq 35^{\circ}\text{C}$ )  
**Shipping Name:** PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC  
**Technical Name:** (condensate, sour) Toxic by inhalation  
**Manufacturer/Supplier:** ENCANNA CORPORATION  
500 Centre Street SE  
CALGARY, ALBERTA, T2P 2S5  
**Emergency Telephone:** CANUTEC: 1-613-996-6666  
**Chemical Family:** C5+ aliphatic and aromatic hydrocarbons, with dissolved hydrogen sulphide.

### Section 2 – Hazardous Ingredients of Materials

Hazardous Ingredients	Approximate Concentrations %	C.A.S. Nos.	LD50/LC50 Specify Species & Route	Exposure Limits
Natural Gas Condensates	100	68919-39-1	LC50, rat, $>5610\text{ mg/m}^3$	300 & 500 ppm (STEL) (AB, TLV & BC)
n-Hexane	1-10	110-54-3	LD50, rat, oral, 28.7 g/kg	50 ppm/ 20 ppm (AB & TLV/ BC)
Toluene	1-5	108-88-3	LC50, rat, 4 hrs, 49000 $\text{mg/m}^3$	50 ppm/ 20 ppm (AB/ TLV & BC)
Benzene	0.1-<6	71-43-2	LD50, rat, oral, 930 mg/kg LC50, rat, 4 hrs, 13200 ppm	0.5 & 2.5 ppm (STEL) (AB, TLV & BC)
Butane	1-10	106-97-8	LC50, rat, 4 hrs, 658 $\text{g/m}^3$	1000/ 600 (750) ppm (AB & TLV/ BC (STEL))
Hydrogen Sulphide	$\geq 1$ ppm	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). Gasoline exposure levels presented for Natural Gas Condensates.

### Section 3 – Physical Data for Material

**Physical State:** Liquid  
**Specific Gravity:** 0.6-0.75  
**Vapour Density (air=1):** 2.5-3.0  
**Percent Volatiles, by volume:** 100  
**pH:** N.Av.  
**Coefficient of Water/Oil Distribution:**  $<0.1$   
(N.AV. = not available N.App. = not applicable)  
**Vapour Pressure (mmHg):** 600 - 14000 @ 20 deg. C.  
**Odour Threshold (ppm):** N.Av.  
**Evaporation Rate:** N.Av.  
**Boiling Pt. (deg.C):** See Section 1.0  
**Freezing Pt. (deg.C):** -129 to -60  
**Odour & Appearance:** colorless/straw coloured liquid, rotten egg and hydrocarbon odour

### Section 4 – Fire and Explosion

**Flammability:** Yes **Conditions:** Product will ignite at normal temperatures.  
**Means of Extinction:** Foam,  $\text{CO}_2$ , 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 vapors if spill has not ignited. If safe, cut off fuel and allow flame to burn out.  
**Flash Point (deg.C):**  $<-40$  (TCC)  
**Upper Explosive Limit (% by vol.):** 44.0  
**Lower Explosive Limit (% by vol.):** 0.6  
**Auto-Ignition Temp. (deg.C):** 223  
**Hazardous Combustion Products:** Carbon monoxide, carbon dioxide and sulphur dioxide.  
**Sensitivity to Impact:** No  
**Sensitivity to Static Discharge:** Yes, may ignite  
**TDG Flammability Classification:** 3



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### Section 5 – Reactivity Data

**Chemical Stability:** Yes

**Conditions:** Heat

**Incompatibility:** Yes

**Substances:** Oxidizing agents (e.g. chlorine), may react with iron to form iron sulphides.

**Reactivity:** Yes

**Conditions:** Heat, strong sunlight

**Hazardous Decomposition Products:** Hydrogen sulphide.

### Section 6 – Toxicological Properties of Product

**Routes of Entry:**

**Skin Absorption:** Yes

**Skin Contact:** Yes (liquid)

**Eye Contact:** Yes

**Inhalation: Acute:** Yes

**Chronic:** Yes

**Ingestion:** Yes

**Effects of Acute Exposure:** Initial odour of H<sub>2</sub>S detected as low as about 0.1 ppm. Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. Hydrogen sulphide may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness, headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly. Repeated contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin. Contact of liquid with eyes may cause severe irritation.

**Effects of Chronic Exposure:** Due to presence of benzene and n-hexane, long term or high dose rate exposures may increase the risk of anemia, leukemia and nervous system damage. Due to the presence of toluene, long term exposure may increase the risk of hearing loss (ototoxic).

**Sensitization to Product:** No.

**Irritancy:** Yes

**Synergistic Materials:** None reported

**Carcinogenicity:** Yes

**Reproductive Effects:** Possibly

**Teratogenicity:** Possibly

**Mutagenicity:** Possibly

### Section 7 – Preventative Measures

**Personal Protective Equipment:** Use a NIOSH-approved positive pressure self-contained breathing apparatus or supplied air breathing apparatus when working with this product or where concentrations may exceed exposure limits. Use approved gas detectors to assist in the detection and management of both H<sub>2</sub>S and combustible gas and vapours.

**Gloves:** Viton for full hand immersion, nitrile adequate for incidental contact

**Respiratory:** SCBA or SABA

**Eye:** SCBA with full facepiece

**Footwear:** Covered footwear such as steel-toed boots.

**Clothing:** Fire retardant garments that meet NFPA 2112.

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

**Leaks & Spills:** Stop leak if safe to do so. Use appropriate personal protective equipment. Use water spray to cool containers. Remove all ignition sources. Provide explosion-proof clearing ventilation, if possible. Prevent from entering confined spaces. Dike and pump into containers for recycling or disposal. Notify appropriate regulatory authorities.

**Waste Disposal:** Contact regulatory authorities for disposal requirements.

**Handling Procedures & Equipment:** Avoid contact with liquid. 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 (H<sub>2</sub>S)" are recommended. Scale may involve the presence of iron sulphides, 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:** N.Av.

### Section 8 – First aid Measures

**Skin:** Flush skin with water, removing contaminated clothing. Get medical attention if irritation persists or large area of contact. Decontaminate clothing before re-use.

**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:** Ensure own safety. Remove victim to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention immediately.

**Ingestion:** Give 2-3 glasses of milk or water to drink. DO NOT INDUCE VOMITING. Keep warm and at rest. Get immediate medical attention.

### 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