

MATERIAL SAFETY DATA SHEET

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Cenovus Energy Inc. Produced Water (Sweet - From Shallow Gas Production)

SECTION 1 – MATERIAL IDENTIFICATION AND USE

Material Name: PRODUCED WATER (SWEET - FROM SHALLOW GAS PRODUCTION)

Use: Process stream, waste

WHMIS Classification: Not classified

NFPA: Fire: 0 Reactivity: 0 Health: 1

TDG: If transported in a clean tank:

UN: N.Av. **Class:** N.Av. **Packing Group:** N.Av.

Shipping Name: N.Av.

OR TDG: If transported in a tank that last carried crude oil or condensate:

UN: 1267 **Class:** 3 **Packing Group:** I or II

Shipping Name: PETROLEUM CRUDE OIL (See also Section 7, Special Shipping Information).

Manufacturer/Supplier: CENOVUS ENERGY INC.

421 - 7 Ave SW PO Box 766

Calgary, AB T2P 0M5

Emergency Telephone: 1-877-458-8080

Chemical Family: Water containing salts, but negligible hydrocarbons.

SECTION 2 – HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Ingredients	Approximate Concentrations (%)	C.A.S. Nos.	LD50/LC50 (Incl. Species & Route)	Exposure Limits
Sodium chloride	5-20	7647-14-05	N.Av.	N.Av.

SECTION 3 – PHYSICAL DATA FOR MATERIAL

Physical State: Liquid

Specific Gravity: 1.0 - 1.1 @ 20 degrees C

Vapour Density (air=1): N.App.

Percent Volatiles, by volume: 100

pH: N.Av.

Coefficient of Water/Oil Distribution: >100 / 1

Odour & Appearance: Colorless/straw coloured liquid

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

Vapour Pressure (mmHg): N.Av.

Odour Threshold (ppm): N.Av.

Evaporation Rate: N.Av.

Boiling Pt. (deg.C): 100

Freezing Pt. (deg.C): -10 to 0 (est.)

SECTION 4 – FIRE AND EXPLOSION*

Flammability: No

Means of Extinction: N.App.

Special Procedures: N.App.

Flash Point (deg.C) & Method: N.App.

Upper Explosive Limit (% by vol.): N.App.

Lower Explosive Limit (% by vol.): N.App.

Auto-Ignition Temp. (deg.C): N.App.

Hazardous Combustion Products: N.App.

Conditions: Bulk of material is water, and will not ignite.

Sensitivity to Impact: No

Sensitivity to Static Discharge: No

TDG Flammability Classification: N.App.

**The hydrocarbon content is not believed to be high enough to ignite, even temporarily, provided that the material has not been transported in a tank that previously contained crude oil. See Section 7, Special Shipping Information.*

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SECTION 5 – REACTIVITY DATA

Chemical Stability: Yes **Conditions:** N.App.
Incompatibility: N.App. **Substances:** N.App.
Reactivity: N.App. **Conditions:** N.App.
Hazardous Decomposition Products: N.App.

SECTION 6 – TOXICOLOGICAL PROPERTIES OF PRODUCT

Routes of Entry:

Skin Absorption: N.App. **Skin Contact:** Yes **Eye Contact:** Yes
Inhalation: Acute: N.App. **Chronic:** N.App. **Ingestion:** Yes
Effects of Acute Exposure: Contact with liquid may cause irritation of eyes and skin. Skin rash (dermatitis) may occur with repeated exposure.
Effects of Chronic Exposure: None known.
Sensitization to Product: N.Av.
Exposure Limits of Product: N.Av.
Irritancy: Yes
Synergistic Materials: None reported
Carcinogenicity: N.Av. **Reproductive Effects:** N.Av. **Teratogenicity:** N.Av. **Mutagenicity:** N.Av.

SECTION 7 – PREVENTIVE MEASURES

Personal Protective Equipment: Gloves: Nitrile, Viton, neoprene
Respiratory: N.App. **Eye:** Chemical splash goggles
Footwear: As per safety policy. **Clothing:** As per fire protection policy.
Engineering Controls: No special requirements.
Leaks & Spills: Stop leak if safe to do so. Use personal protective equipment. Dyke and pump into containers for recycling or disposal. Prevent contamination of land or water courses. Notify appropriate regulatory authorities.
Waste Disposal: Contact appropriate regulatory authorities for disposal requirements.
Handling Procedures & Equipment: Avoid eye and skin contact with liquid.
Storage Requirements: No special requirements.
Special Shipping Information: If this material has been carried in a vehicle that last transported crude oil or condensate, mark shipping document “Residue – Last Contained, Petroleum Crude Oil”.

SECTION 8 – FIRST AID MEASURES

Skin: Flush skin with water, removing contaminated clothing. Get medical attention if irritation persists.
Eye: Immediately flush with large amounts of luke warm water for 15 minutes, lifting upper and lower lids at intervals. Get medical attention if irritation persists.
Inhalation: N.App.
Ingestion: Give 2-3 glasses of milk or water to drink. DO NOT INDUCE VOMITING. Keep warm and at rest. Get medical attention.

SECTION 9 – PREPARATION DATE OF MSDS

Prepared By: Cenovus Energy Inc. Environment, Health and Safety (EHS)
Phone Number: 1-877-458-8080
Preparation Date: July 10, 2011 Expiry Date: July 10, 2014