

MATERIAL SAFETY DATA SHEET

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: Not a dangerous good as defined by TDG

If transported in a tank that last carried crude oil or condensate: use TDG classification of residue

Manufacturer/Supplier: CENOVUS ENERGY INC.

500 Centre Street SE, PO Box 766

Calgary, AB T2P 0M5

Emergency Telephone: 1-877-458-8080, CANUTEC 1-613-996-6666 (Canada)

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: N.Av.

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 (estimate)

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.*

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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: N.Av.

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

Ingestion: DO NOT INDUCE VOMITING. Keep warm and at rest. Get medical attention.

SECTION 9 – PREPARATION DATE OF MSDS

Prepared By: Cenovus Energy Inc. Health and Safety

Phone Number: 1-403-766-2000

Preparation Date: January 24, 2017