

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: PRODUCED WATER
Synonyms: Not available.
Product Use: Waste stream.
Manufacturer/Supplier: Enerchem International Inc.
 Suite 3900, Bow Valley Square 2
 205-5th Ave SW
 Calgary, Alberta
 T2P 2V7
Phone Number: 1-800-380-4580
Emergency Phone: (613) 996-6666 (CANUTEC)
Date of Preparation: December 1, 2011

Section 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION
 MAY IRRITATE EYES AND SKIN.

Colour: Colourless.
Physical State: Liquid.
Odour: Odourless or Rotten eggs.

WHMIS	Personal Protection Equipment	TDG (Ground)
Not a controlled product.		Not regulated.

Potential Health Effects: See Section 11 for more information.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Eye: May be irritating to eyes. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H₂S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Skin: May be irritating to skin. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Inhalation: May cause respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Hydrogen sulphide may cause symptoms such as digestive upset and loss of appetite, loss of sense of smell and pulmonary edema.

Chronic Effects: See Section 11 for more information.

Medical Conditions Aggravated By Exposure: Not available.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood.
Cardiovascular system. Nervous system.

Potential Environmental Effects: See Section 12 for more information.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Wt. %
Water	7732-18-5	> 99
Hydrogen sulfide (H ₂ S)	7783-06-4	< 50 ppm

Section 4: FIRST AID MEASURES

Eye Contact: Flush eyes with plenty of water for at least 15 minutes. If signs/symptoms persist, get medical attention.

Skin Contact: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. If signs/symptoms develop, get medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Inhalation: Remove person to fresh air. If breathing has stopped apply artificial respiration. If signs/symptoms develop, get medical attention.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or MSDS where possible).

Note to Physicians: Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

Section 5: FIRE FIGHTING MEASURES

Flammability: Not flammable or combustible by OSHA/WHMIS criteria.

Means of Extinction

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Product will not support combustion.

Protection of Firefighters: Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and self-contained breathing apparatus. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces.

Explosion Data

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Don

full-face, positive pressure, self-contained breathing apparatus.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Stop leak if without risk. Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: Dispose of in accordance with all federal, provincial and local regulations. Comply with federal, provincial, and local requirements for spill and/or release notification.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Avoid contact with skin and eyes. Handle and open container with care. When using do not eat or drink. Wash hands before eating, drinking, or smoking. See Section 8 for information on Personal Protective Equipment.

Storage:

Store in cool, dry, well-ventilated area away from incompatible materials, heat, and sources of ignition. Head spaces in storage containers may contain toxic hydrogen sulphide gas. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Water

(7732-18-5) **ACGIH:** No TLV established.

(7732-18-5) **OSHA:** No PEL established.

Hydrogen sulfide (H₂S)

(7783-06-4) **ACGIH:** 1 ppm (TWA); 5 ppm (STEL); (2009)

(7783-06-4) **OSHA:** 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)

10 ppm (TWA); 15 ppm (STEL) [Vacated]

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

C: Ceiling

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

Personal Protective Equipment

Eye/Face Protection: Safety glasses are recommended.

Hand Protection: Wear impervious gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Not available.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear.

Colour: Colourless.

Odour: Odourless or Rotten eggs.

Odour Threshold: 0.00047 ppm (Hydrogen sulfide)

Physical State: Liquid.

pH (as supplied): 8.53

Viscosity: Not available.

Melting Point: 0 °C

Boiling Point: 100 °C

Flash Point: Not available.

Evaporation Rate: 1 (Water = 1)

Lower Flammability Limit: Not available.

Upper Flammability Limit: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Specific Gravity: 1 (Water = 1) @ 25°C

Density: 1000 kg/m³

Solubility in Water: Not available.

Coefficient of Water/Oil Distribution: Not available.

Auto-ignition Temperature: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Section 10: STABILITY AND REACTIVITY

Stability: Stable under normal storage conditions.

Conditions of Reactivity: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Bases. Strong oxidizers. Metals. Halogens. Metal oxides. Metal salts.

Hazardous Decomposition Products: Not available.

Possibility of Hazardous Reactions: None known.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Water	7732-18-5	Not available.	Not available.	>90000 µl/kg, (rat),
Hydrogen sulfide (H ₂ S)	7783-06-4	Not available.	Not available.	444 ppm, (rat),

Eye: May be irritating to eyes. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H₂S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

Skin: May be irritating to skin. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Inhalation: May cause respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Hydrogen sulphide may cause symptoms such as digestive upset and loss of appetite, loss of sense of smell and pulmonary edema.

Skin Sensitization: Not hazardous by OSHA/WHMIS criteria.

Respiratory Sensitization: Not hazardous by OSHA/WHMIS criteria.

EFFECTS OF CHRONIC EXPOSURE

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Nervous system.

Chronic Effects: Not hazardous by OSHA/WHMIS criteria. Prolonged or repeated contact may dry skin and cause irritation. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation: damage to cardiovascular system.

Carcinogenicity: Not hazardous by OSHA/WHMIS criteria. This product does not contain any carcinogens or potential carcinogens as listed by ACGIH, IARC, OSHA, or NTP.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Water	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.
Hydrogen sulfide (H ₂ S)	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.

Mutagenicity: Not hazardous by OSHA/WHMIS criteria.

Reproductive Effects: Not hazardous by OSHA/WHMIS criteria.

Developmental Effects

Teratogenicity: Not hazardous by OSHA/WHMIS criteria.

Embryotoxicity: Not hazardous by OSHA/WHMIS criteria.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORTATION INFORMATION

CFR

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

TDG

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.



1-800-380-4580

MATERIAL SAFETY DATA SHEET

PRODUCED WATER

Date of Preparation: December 1, 2011

WHMIS Classification: Not a controlled product.

Hazard Symbols: None.

United States

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Water	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.
Hydrogen sulfide (H2S)	500	100	100	313s	U135	10000

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Water	7732-18-5	Not listed.
Hydrogen sulfide (H2S)	7783-06-4	E

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Water	7732-18-5	Not listed.
Hydrogen sulfide (H2S)	7783-06-4	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Water	7732-18-5	Not listed.
Hydrogen sulfide (H2S)	7783-06-4	E

Note: E = Environmental Hazard; S = Special Hazardous Substance

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



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MATERIAL SAFETY DATA SHEET

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Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.

Expiry Date: November 30, 2014

Version: 1.0

MSDS Prepared by: Deerfoot Consulting Inc.

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