



Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Desalter Water

Synonyms: Not available.

Product Use: Waste stream.

Manufacturer/Supplier: Husky Refinery
5650-52 Street
Lloydminster, Alberta
T9V 0R7

Phone Number: 780-871-6571

Emergency Phone: 877-262-2111

Date of Preparation: December 6, 2013

Section 2: HAZARDS IDENTIFICATION



EMERGENCY OVERVIEW

CAUTION
MAY IRRITATE EYES, SKIN AND RESPIRATORY TRACT.

Colour: Colourless.

Physical State: Liquid.

Odour: Rotten eggs.

| WHMIS | Personal Protection Equipment | TDG (Ground) |
|---|--|-----------------------|
|  <p>Not a controlled product. (Classification due to presence of Hydrogen Sulfide)</p> |  | <p>Not regulated.</p> |

Potential Health Effects: See Section 11 for more information.

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

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product contains hydrogen sulphide (H₂S) gas which may collect in confined spaces. Hydrogen sulphide may cause symptoms such as digestive upset and loss of appetite, loss of sense of smell and pulmonary edema. At 500-1000 ppm Hydrogen sulphide may cause respiratory paralysis, collapse and death without rescue.

Eye: Causes eye irritation. 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 cause skin irritation. 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.

Medical Conditions Aggravated By Exposure: Not available.

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

Potential Environmental Effects: See Section 12 for more information.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredient(s) | CAS No. | % wt./wt. |
|----------------------|----------------|------------------|
| Water | 7732-18-5 | > 99.99 |
| Iron | 7439-89-6 | 0.0001 |
| Chlorides | Not available | 0.0017 |
| Hydrogen sulphide | 7783-06-4 | < 0.1 |

Section 4: FIRST AID MEASURES

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

Eye Contact: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.

Skin Contact: If on skin: Wash with plenty of soap and water. Call a poison center or doctor if you feel unwell.

Ingestion: If swallowed: Call a poison center or doctor/physician if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

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. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

Means of Extinction

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

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of sulphur. Oxides of iron.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

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

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8. 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: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Do not breathe mist, vapors, or spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. See Section 8 for information on Personal Protective Equipment.

Storage:
Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Head spaces in storage containers may contain toxic hydrogen sulphide gas. Structural materials and lighting and ventilation systems should be corrosion resistant.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Water [CAS No. 7732-18-5]

ACGIH: No TLV established.

OSHA: No PEL established.



Iron [CAS No. 7439-89-6]

ACGIH: No TLV established.

OSHA: No PEL established.

Chlorides [CAS No. Not available]

ACGIH: No TLV established.

OSHA: No PEL established.

Hydrogen sulphide [CAS No. 7783-06-4]

ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009)

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 (PPE)

Eye/Face Protection:

Wear safety glasses. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

Where hydrogen sulfide is present or possibly present in confined spaces at hazardous levels an appropriate NIOSH/MSHA approved air-purifying respirator or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices.



Section 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---------------------------------|
| Appearance: | Transparent. |
| Colour: | Colourless. |
| Odour: | Rotten eggs. |
| Odour Threshold: | 0.0047 ppm, (Hydrogen sulphide) |
| Physical State: | Liquid. |
| pH: | Not available. |
| Viscosity: | Not available. |
| Melting Point: | 0 °C (32 °F) (Weighted average) |
| Boiling Point: | 100 °C (212 °F) |
| Flash Point: | Not available. |
| Evaporation Rate: | Not available. |
| Lower Flammability Limit: | Not available. |
| Upper Flammability Limit: | Not available. |
| Vapor Pressure: | Not available. |
| Vapor Density: | Not available. |
| Specific Gravity: | 1 (Water = 1) |
| Density: | Not available. |
| 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: | Strong oxidizers. Metals. Halogens. |
| Hazardous Decomposition Products: | Hazardous sulphur dioxide, and related oxides of sulphur may be generated upon combustion. |
| Possibility of Hazardous Reactions: | None known. |

**Section 11: TOXICOLOGICAL INFORMATION****EFFECTS OF ACUTE EXPOSURE****Component Toxicity**

| Component | CAS No. | LD₅₀ oral | LD₅₀ dermal | LC₅₀ |
|-------------------|----------------|-----------------------------|-------------------------------|----------------------------|
| Water | 7732-18-5 | Not available. | Not available. | > 90000 µl/kg (rat); 4H |
| Iron | 7439-89-6 | 30000 mg/kg (rat) | Not available. | Not available. |
| Chlorides | Not available. | Not available. | Not available. | Not available. |
| Hydrogen sulphide | 7783-06-4 | Not available. | Not available. | 444 ppm (rat); 4H |

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product contains hydrogen sulphide (H₂S) gas which may collect in confined spaces. Hydrogen sulphide may cause symptoms such as digestive upset and loss of appetite, loss of sense of smell and pulmonary edema. At 500-1000 ppm Hydrogen sulphide may cause respiratory paralysis, collapse and death without rescue.

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Skin: May cause skin irritation. 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.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

EFFECTS OF CHRONIC EXPOSURE

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

Chronic Effects: 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: This product does not contain any carcinogens or potential carcinogens as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.



Husky Energy

MATERIAL SAFETY DATA SHEET

Desalter Water

Date of Preparation: December 6, 2013

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

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: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (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.

WHMIS Classification: Not a controlled product.
Classification due to presence of Hydrogen Sulfide:
Class D1A - Very Toxic Material.
Class D2B - Eye irritant.

Hazard Symbols:



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.) |
|-------------------|------------------------------|---------------------------|------------------|-------------|-----------|----------------------|
| Hydrogen sulphide | 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 |
|-------------------|-----------|----------|
| Hydrogen sulphide | 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 |
|-------------------|-----------|----------|
| Hydrogen sulphide | 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 |
|-------------------|-----------|----------|
| Hydrogen sulphide | 7783-06-4 | E |

Note: E = Environmental Hazard;



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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.

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 their own particular use.

MSDS Expiry Date (Canada): December 5, 2016

Version: 2.0

MSDS Prepared by: **Deerfoot Consulting Inc.**

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