

Safety Data Sheet**Section 1: Identification****Product identifier****Product Name**

- **Produced Water**

Synonyms

- Lease Water; Salt Water

Relevant identified uses of the substance or mixture and uses advised against**Recommended use**

- Industrial Use

Details of the supplier of the safety data sheet**Manufacturer**

- Riviera Operating, LLC
600 Travis
Suite 1700 Houston, TX 77002
United States
www.rivieraresourcesinc.com

Telephone (General) • 281-840-4000 - EHS Telephone No.

Emergency telephone number**Manufacturer**

- 1-866-951-9825 - Company Emergency Telephone No. (3E)

Section 2: Hazard Identification**United States (US)**

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture**OSHA HCS 2012**

- Germ Cell Mutagenicity 1B - H340
Carcinogenicity 1A - H350
Reproductive Toxicity 2 - H361

Label elements**OSHA HCS 2012****DANGER**

- Hazard statements** • May cause genetic defects. - H340
May cause cancer. - H350
Suspected of damaging fertility or the unborn child. - H361

Precautionary statements

- Prevention** • Obtain special instructions before use. - P201

Do not handle until all safety precautions have been read and understood. - P202
Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response • IF exposed or concerned: Get medical advice/attention. - P308+P313

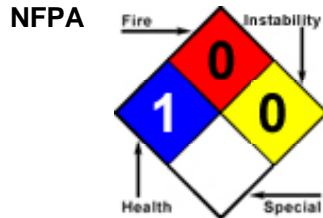
Storage/Disposal • Store locked up. - P405
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Other information



Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

| Composition | | | | | |
|------------------|---------------|------|--|---|----------|
| Chemical Name | Identifiers | % | LD50/LC50 | Classifications According to Regulation/Directive | Comments |
| Petroleum | CAS:8002-05-9 | < 1% | Ingestion/Oral-Rat LD50 • >4300 mg/kg | OSHA HCS 2012: Flam Liq. 1; Eye Irrit. 2B; STOT SE 3: Narc.; Repr. 2; Asp. Tox. 1 | NDA |
| Hydrogen sulfide | CAS:7783-06-4 | < 1% | Inhalation-Rat LC50 • 470 mg/m ³ 6 Hour(s) | OSHA HCS 2012: Flam. Gas 2; Press. Gas - Comp.; Eye Irrit. 2A, STOT SE 3: Resp. Irrit.; Acute Tox. 2 (Inhalation) | NDA |
| Benzene | CAS:71-43-2 | < 1% | Ingestion/Oral-Rat LD50 • 930 mg/kg Inhalation-Rat LC50 • 10000 ppm 7 Hour(s) Skin-Rabbit LD50 • >9400 µL/kg | OSHA HCS 2012: Flam Liq. 2; Eye Irrit. 2A; Skin Irrit. 2; Muta. 1B; Carc. 1A; Asp. Tox 1; STOT RE 1 (Blood, Bone marrow); Repr. 2; STOT SE 3: Narc.; Acute Tox 4 (Oral) | NDA |

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Get medical attention immediately.

Skin

- Wash skin with soap and water. Get medical attention if symptoms occur.

Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion

- First aid is normally not required. However, if greater than 1/2 liter (pint) ingested, seek medical attention.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures**Extinguishing media**

Suitable Extinguishing Media • In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media • No data available

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • None known.

Hazardous Combustion Products • Carbon Oxides, Hydrogen Sulfide.

Advice for firefighters

- Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

Section 6 - Accidental Release Measures**Personal precautions, protective equipment and emergency procedures**

Personal Precautions • Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing . Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures • Keep unauthorized personnel away. Ventilate enclosed areas.

Environmental precautions

- Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
LARGE SPILLS: Dike far ahead of spill for later disposal.
Flush spill area with water spray.

Section 7 - Handling and Storage**Precautions for safe handling****Handling**

- Use only with adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing mist or vapor. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities**Storage**

- Store in a well-ventilated place. Keep container tightly closed. Keep away from incompatible materials.

Section 8 - Exposure Controls/Personal Protection

Control parameters

| Exposure Limits/Guidelines | | | | |
|---------------------------------|----------|-----------------|--|---|
| | Result | ACGIH | NIOSH | OSHA |
| Hydrogen sulfide (7783-06-4) | Ceilings | Not established | 10 ppm Ceiling (10 min); 15 mg/m ³ Ceiling (10 min) | 20 ppm Ceiling |
| | STELs | 5 ppm STEL | Not established | Not established |
| | TWAs | 1 ppm TWA | Not established | Not established |
| Benzene (71-43-2) | Ceilings | Not established | Not established | 25 ppm Ceiling |
| | STELs | 2.5 ppm STEL | 1 ppm STEL | 5 ppm STEL (see 29 CFR 1910.1028) |
| | TWAs | 0.5 ppm TWA | 0.1 ppm TWA | 10 ppm TWA (applies to industry segments exempt from the benzene standard at 29 CFR 1910.1028); 1 ppm TWA |
| Petroleum (8002-05-9) | Ceilings | Not established | 1800 mg/m ³ Ceiling (15 min) | Not established |
| | TWAs | Not established | 350 mg/m ³ TWA | Not established |

Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety goggles.

Skin/Body

- Wear appropriate gloves.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

| Material Description | | | |
|----------------------|-------------------|------------------------|---|
| Physical Form | Liquid | Appearance/Description | Clear liquid with a hydrocarbon or maybe rotten egg odor. |
| Color | Clear | Odor | Hydrocarbon, may have rotten egg odor. |
| Odor Threshold | No data available | | |
| General Properties | | | |

| | | | |
|-------------------------------------|--------------------------------|------------------|-------------------|
| Boiling Point | 100 C(212 F) | Melting Point | < 0 C(< 32 F) |
| Decomposition Temperature | No data available | pH | No data available |
| Specific Gravity/Relative Density | > 1 Water=1 @ 4 C(39.2 F) | Water Solubility | No data available |
| Viscosity | No data available | | |
| Volatility | | | |
| Vapor Pressure | 0.11 mmHg (torr) @ 60 C(140 F) | Vapor Density | No data available |
| Evaporation Rate | No data available | | |
| Flammability | | | |
| Flash Point | No data available | UEL | No data available |
| LEL | No data available | Autoignition | No data available |
| Flammability (solid, gas) | No data available | | |
| Environmental | | | |
| Octanol/Water Partition coefficient | No data available | | |

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- None known.

Incompatible materials

- Strong oxidizing agents.

Hazardous decomposition products

- No data available

Section 11 - Toxicological Information

Information on toxicological effects

| Component Name | CAS | Data |
|-------------------------|-----------|---|
| Benzene (< 1%) | 71-43-2 | Acute Toxicity: Ingestion/Oral-Rat LD50 • 930 mg/kg; ihl-rat LC50:10000 ppm/7H; ihl-hmn TCLo:100 ppm; Irritation: eye-rbt 88 mg MOD; skn-rbt 20 mg/24H MOD; Multi-dose Toxicity: ihl-mus TCLo:25 ppm/6H/5D-I; Mutagen: dlt-mus-ork 1 mg/kg; sce-mus-ihl 10 ppm/6H; Reproductive: ihl-rat TCLo:50 ppm/24H (7-14D preg); Tumorigen/Carcinogen: orl-rat TDLo:52 gm/kg/52W-I |
| Hydrogen sulfide (< 1%) | 7783-06-4 | Acute Toxicity: ihl-rat LC50:700 mg/m3/4H; ihl-hmn TCLo:140 mg/m3; ihl-hmn TCLo:2800 mg/m3; Irritation: eye-hmn 0.000125 ppm/5H; Reproductive: ihl-rat TCLo:10 mg/m3 (48D pre/1-22D preg) |
| Petroleum (< 1%) | 8002-05-9 | Acute Toxicity: orl-rat LD50:>4300 mg/kg; Irritation: eye-rbt 100 mg MLD; skn-rbt 500 mg/24H MOD |
| GHS Properties | | Classification |

| | |
|--------------------------------------|---|
| Acute toxicity | OSHA HCS 2012 • No data available |
| Aspiration Hazard | OSHA HCS 2012 • No data available |
| Carcinogenicity | OSHA HCS 2012 • Carcinogenicity 1A |
| Germ Cell Mutagenicity | OSHA HCS 2012 • Germ Cell Mutagenicity 1B |
| Skin corrosion/Irritation | OSHA HCS 2012 • No data available |
| Skin sensitization | OSHA HCS 2012 • No data available |
| STOT-RE | OSHA HCS 2012 • No data available |
| STOT-SE | OSHA HCS 2012 • No data available |
| Toxicity for Reproduction | OSHA HCS 2012 • Toxic to Reproduction 2 |
| Respiratory sensitization | OSHA HCS 2012 • No data available |
| Serious eye damage/Irritation | OSHA HCS 2012 • No data available |

Route(s) of entry/exposure • Inhalation, Skin, Eye, Ingestion

Potential Health Effects

Inhalation

- Acute (Immediate)** • Vapor may irritate the respiratory tract.
- Chronic (Delayed)** • No data available

Skin

- Acute (Immediate)** • Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** • No data available

Eye

- Acute (Immediate)** • May cause irritation.
- Chronic (Delayed)** • No data available

Ingestion

- Acute (Immediate)** • No harmful effects expected in amounts likely to be ingested by accident.
- Chronic (Delayed)** • No data available

Mutagenic Effects

- Exposure to benzene may cause mutagenic effects.

Carcinogenic Effects

- Prolonged and repeated exposure to benzene may lead to the development of acute myelogenous leukemia (AML).

| Carcinogenic Effects | | | | |
|-----------------------------|------------|-----------------------------------|----------------------|------------------------|
| | CAS | OSHA | IARC | NTP |
| Benzene | 71-43-2 | Specifically Regulated Carcinogen | Group 1-Carcinogenic | Known Human Carcinogen |

Reproductive Effects • May cause reproductive effects based on studies in animals for benzene.

Key to abbreviations

- LC = Lethal Concentration MOD = Moderate
- LD = Lethal Dose TC = Toxic Concentration
- MLD = Mild TD = Toxic Dose

Section 12 - Ecological Information

Toxicity

- Material data lacking.

Persistence and degradability

- Material data lacking.

Bioaccumulative potential

- Material data lacking.

Mobility in Soil

- Material data lacking.

Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations**Waste treatment methods****Product waste**

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

| | UN number | UN proper shipping name | Transport hazard class(es) | Packing group | Environmental hazards |
|-----|-----------|--|----------------------------|---------------|-----------------------|
| DOT | UN3082 | Environmentally Hazardous Substances, Liquid, n.o.s. (Benzene) | 9 | III | NDA |

Special precautions for user

- None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not relevant.

Section 15 - Regulatory Information**Safety, health and environmental regulations/legislation specific for the substance or mixture**

SARA Hazard Classifications • Chronic

Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16 - Other Information**Last Revision Date**

- 24/March/2014

Preparation Date

- 24/March/2014

Disclaimer/Statement of Liability

- This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Key to abbreviations

NDA = No data available

