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
717 Texas Ave
Suite 2000 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
Section 3 - Composition/Information on Ingredients

### Substances

- Material does not meet the criteria of a substance.

### Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>CAS:8002-05-9</td>
<td>&lt; 1%</td>
<td>Ingestion/Oral-Rat LD50 • &gt;4300 mg/kg</td>
<td>OSHA HCS 2012: Flam. Liq. 1; Eye Irrit. 2B; STOT SE 3: Narc.; Repr. 2; Asp. Tox. 1</td>
<td>NDA</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>CAS:7783-06-4</td>
<td>&lt; 1%</td>
<td>Inhalation-Rat LC50 • 470 mg/m³ 6 Hour(s)</td>
<td>OSHA HCS 2012: Flam. Gas 2; Press. Gas - Comp.; Eye Irrit. 2A, STOT SE 3: Resp. Irrit.; Acute Tox. 2 (Inhalation)</td>
<td>NDA</td>
</tr>
<tr>
<td>Benzene</td>
<td>CAS:71-43-2</td>
<td>&lt; 1%</td>
<td>Ingestion/Oral-Rat LD50 • 930 mg/kg Inhalation-Rat LC50 • 10000 ppm 7 Hour(s) Skin-Rabbit LD50 • &gt;9400 µL/kg</td>
<td>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)</td>
<td>NDA</td>
</tr>
</tbody>
</table>

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.

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### 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

<table>
<thead>
<tr>
<th>Exposure Limits/Guidelines</th>
<th>Result</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
<td>Ceilings</td>
<td>Not established</td>
<td>10 ppm Ceiling (10 min); 15 mg/m³ Ceiling (10 min)</td>
<td>20 ppm Ceiling</td>
</tr>
<tr>
<td></td>
<td>STELs</td>
<td>5 ppm STEL</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>TWAs</td>
<td>1 ppm TWA</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Benzene (71-43-2)</td>
<td>Ceilings</td>
<td>Not established</td>
<td>Not established</td>
<td>25 ppm Ceiling</td>
</tr>
<tr>
<td></td>
<td>STELs</td>
<td>2.5 ppm STEL</td>
<td>1 ppm STEL</td>
<td>5 ppm STEL (see 29 CFR 1910.1028)</td>
</tr>
<tr>
<td></td>
<td>TWAs</td>
<td>0.5 ppm TWA</td>
<td>0.1 ppm TWA</td>
<td>10 ppm TWA (applies to industry segments exempt from the benzene standard at 29 CFR 1910.1028); 1 ppm TWA</td>
</tr>
<tr>
<td>Petroleum (8002-05-9)</td>
<td>Ceilings</td>
<td>Not established</td>
<td>1800 mg/m³ Ceiling (15 min)</td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>TWAs</td>
<td>Not established</td>
<td>350 mg/m³ TWA</td>
<td>Not established</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Physical Form</th>
<th>Appearance/Description</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liquid</td>
<td>Clear liquid with a hydrocarbon or maybe rotten egg odor.</td>
<td>No data available</td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
<td>Hydrocarbon, may have rotten egg odor.</td>
<td></td>
</tr>
</tbody>
</table>

Preparation Date: 24/March/2014
Revision Date: 24/March/2014
Page 4 of 8

Format: GHS Language: English (US) OSHA HCS 2012
### 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

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS</th>
<th>Acute Toxicity</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene (&lt; 1%)</td>
<td>71-43-2</td>
<td><strong>Ingestion/Oral-Rat</strong> LD50: 930 mg/kg; inh-rat LC50: 10000 ppm/7H; inh-hmn TCLo: 100 ppm;</td>
<td><strong>Irritation:</strong> eye-rbt 88 mg MOD; skn-rbt 20 mg/24H MOD; <strong>Multi-dose Toxicity:</strong> inh-mus TCLo: 25 ppm/6H/5D-I; <strong>Mutagen:</strong> dtl-mus-orl 1 mg/kg; sce-mus-ihl 10 ppm/6H; <strong>Reproductive:</strong> inh-rat TCLo: 50 ppm/24H (7-14D preg); <strong>Tumorigen/Carcinogen:</strong> orl-rat TDL0: 52 gm/kg/52W-I</td>
</tr>
<tr>
<td>Hydrogen sulfide (&lt; 1%)</td>
<td>7783-06-4</td>
<td><strong>Ingestion/Oral-Rat</strong> LC50: 700 mg/m3/4H; inh-hmn TCLo: 140 mg/m3; inh-hmn TCLo: 2800 mg/m3; <strong>Irritation:</strong> eye-hmn 0.000125 ppm/5H; <strong>Reproductive:</strong> inh-rat TCLo: 10 mg/m3 (48D pre/1-22D preg)</td>
<td></td>
</tr>
<tr>
<td>Petroleum (&lt; 1%)</td>
<td>8002-05-9</td>
<td><strong>Ingestion/Oral-Rat</strong> LD50: 4300 mg/kg; <strong>Irritation:</strong> eye-rbt 100 mg MLD; skn-rbt 500 mg/24H MOD</td>
<td></td>
</tr>
</tbody>
</table>

**GHS Properties**

**Classification**

---

Preparation Date: 24/March/2014
Revision Date: 24/March/2014
Format: GHS Language: English (US)
OSHA HCS 2012

Page 5 of 8
### 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).

<table>
<thead>
<tr>
<th>Carcinogenic Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene 71-43-2</td>
</tr>
</tbody>
</table>

#### 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

<table>
<thead>
<tr>
<th>Product waste</th>
<th>Packaged waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.</td>
<td>● Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.</td>
</tr>
</tbody>
</table>

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN proper shipping name</th>
<th>Transport hazard class(es)</th>
<th>Packing group</th>
<th>Environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT UN3082</td>
<td>Environmentally Hazardous Substances, Liquid, n.o.s. (Benzene)</td>
<td>9</td>
<td>III</td>
<td>NDA</td>
</tr>
</tbody>
</table>

Special precautions for user
  ● None known.
  ● Not relevant.

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

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
  ● 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