

## 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  
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

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

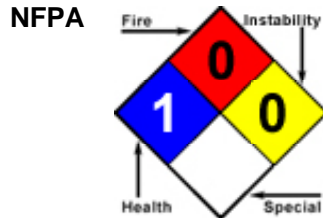
**Storage/Disposal** • Store locked up. - P405  
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

## 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 <sup>3</sup> 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 <sup>3</sup> 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 <sup>3</sup> Ceiling (15 min)	Not established
	TWAs	Not established	350 mg/m <sup>3</sup> 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		
<b>Volatility</b>			
Vapor Pressure	0.11 mmHg (torr) @ 60 C(140 F)	Vapor Density	No data available
Evaporation Rate	No data available		
<b>Flammability</b>			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
<b>Environmental</b>			
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	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 930 mg/kg; ihl-rat LC50:10000 ppm/7H; ihl-hmn TCLo:100 ppm; <b>Irritation:</b> eye-rbt 88 mg MOD; skn-rbt 20 mg/24H MOD; <b>Multi-dose Toxicity:</b> ihl-mus TCLo:25 ppm/6H/5D-I; <b>Mutagen:</b> dlt-mus-ork 1 mg/kg; sce-mus-ihl 10 ppm/6H; <b>Reproductive:</b> ihl-rat TCLo:50 ppm/24H (7-14D preg); <b>Tumorigen/Carcinogen:</b> orl-rat TDLo:52 gm/kg/52W-I
Hydrogen sulfide (< 1%)	7783-06-4	<b>Acute Toxicity:</b> ihl-rat LC50:700 mg/m3/4H; ihl-hmn TCLo:140 mg/m3; ihl-hmn TCLo:2800 mg/m3; <b>Irritation:</b> eye-hmn 0.000125 ppm/5H; <b>Reproductive:</b> ihl-rat TCLo:10 mg/m3 (48D pre/1-22D preg)
Petroleum (< 1%)	8002-05-9	<b>Acute Toxicity:</b> orl-rat LD50:>4300 mg/kg; <b>Irritation:</b> eye-rbt 100 mg MLD; skn-rbt 500 mg/24H MOD
<b>GHS Properties</b>		<b>Classification</b>

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

<b>Carcinogenic Effects</b>				
	<b>CAS</b>	<b>OSHA</b>	<b>IARC</b>	<b>NTP</b>
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

