





1.0 Identification

GHS product identifier: produced water, sour	Version #: 02
Synonyms: sour water	Issue date: 07/31/2016
	Revision date: 07/31/2019
	Supersedes date: previous to 07/31/2016
CAS #: mixture	
Recommended use: Product produced at Ovintiv well sites. Includes liquids, except for natural gas condensates and crude oil generated from a produced well.	
Recommended restrictions: Use in accordance with this SDS.	
Manufacturer: Ovintiv USA Inc., 370 17 th Street, Suite 1700, Denver, CO 80202	
Emergency phone #: 800-262-8200 or 911	Email: myEHS@ovintiv.com

2.0 Hazard Identification

2.1 GHS Classification and Label Elements

Signal Word: Warning			
Type of Hazard		Category	Hazard Symbol
Physical hazards	Flammable liquids	3	
Health hazards	Skin corrosion/irritation	3	 
	Reproductive toxicity	2	
	Acute toxicity, inhalation	2	
Environmental hazards	Hazardous to aquatic environment, long-term hazard	2	

2.2 Hazard Statement

- Causes mild skin irritation.
- Toxic to aquatic life with long-lasting effects.
- Suspected of damaging a fetus.
- Poisonous by inhalation.

2.3 Precautionary Statement

- Prevention
 - Keep away from heat/sparks/open flames/hot surfaces.
 - Do not handle until all safety precautions have been read and understood.
 - Obtain special instructions before use.
 - Use personal protective equipment to prevent contact, as determined by assessing hazards and likely routes of exposure.
 - Avoid release to the environment.
- Response
 - In case of fire, use alcohol-resistant foam, carbon dioxide, dry powder, or water fog for extinction.
 - If exposed or concerned, get medical advice/attention.
 - Collect spillage if safe to do so.
- Storage
 - Store in a well-ventilated place.
 - Keep cool.
 - Store locked up.
- Disposal
 - Dispose of contents/container in accordance with local/regional/national/international regulations.
- Specific hazard
 - Direct contact with eyes may cause temporary irritation.
 - Prolonged contact may cause dryness of the skin.
- Hazards not otherwise classified
 - None

3.0 Composition/Information on Ingredients

Components	CAS #	Percent (Weight)
Water	7732-18-8	98
Hydrogen sulfide	7783-06-4	>0.01
Natural gas condensates	68919-39-01	<1

Components	CAS #	Percent (Weight)
Crude oil	8002-05-9	<1
Benzene	71-43-2	<0.1
Xylenes	95-47-6	<0.1
Ethylbenzene	100-41-4	<0.01

4.0 First Aid Measures

4.1 First Aid Procedures

- Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if discomfort develops or persists. If there is any suspicion of inhalation of hydrogen sulfide, follow these measures:
 - Rescuers must wear breathing apparatus and follow rescue procedures.
 - Remove casualty to fresh air as quickly as possible.
 - Immediately begin artificial respiration if breathing has ceased.
 - Provision of oxygen may help.
- Skin contact: Immediately remove contaminated clothing. Wash with soap and water. Continue to rinse for up to 15 minutes. In case of rashes, wounds, or other skin disorders, seek medical attention and bring along this SDS.
- Eye contact: Remove contact lenses and open eyelids wide apart. Immediately flush with plenty of water for up to 15 minutes. Get medical attention if irritation develops or persists.
- Ingestion: Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and take this SDS. Never give anything by mouth to an unconscious person.

4.2 Most Important Symptoms (Effects Acute and Delayed)

- Irritation of eyes and mucous membranes.
- Skin irritation.
- Dermatitis.
- Ingestion may cause irritation and malaise.
- Droplets of product aspirated into the lungs through ingestion or vomiting may cause serious chemical pneumonia.

4.3 Notes to Physician

- Treat symptomatically. The effects may be delayed.

4.4 General Advice

- Get medical attention if any discomfort develops.

5.0 Fire-Fighting Measures**5.1 Flammable Properties**

- This product is flammable.
- Heating may generate vapors which may form explosive vapor/air mixtures.
- See Sections 9.0 Physical and Chemical Properties and 10.0 Stability and Reactivity for physical/chemical and stability/reactive properties.
- NFPA: health 4, flammability 1, instability: 0.

Extinguishing Media

Suitable	Do Not Use
<ul style="list-style-type: none"> • Dry chemical • Carbon dioxide (CO₂) • Sand • Earth • Water spray • Regular foam 	<ul style="list-style-type: none"> • Water jet, which will spread the fire. • Using foam and water on the same surface; water destroys foam.

Protection of Fire-Fighters

Specific Hazards Arising from Product	Protective Equipment and Precautions
<ul style="list-style-type: none"> • Thermal decomposition may produce smoke and lower-molecular-weight organic compounds, whose composition may not have been characterized. • Sulfur oxides (SO_x) • Nitrogen oxides (NO_x) 	<ul style="list-style-type: none"> • Self-contained breathing apparatus (SCBA) and full protective clothing must be worn when fighting fire in an enclosed or inadequately ventilated area.

5.2 Fire-Fighting Equipment/Instructions

- Move containers of product from fire area if you can do it without risk.
- Use water spray to cool unopened containers.
- Cool containers with flooding quantities of water until well after fire is out.

6.0 Accidental Release Measures

- Personal precautions:
 - Stay upwind.

- Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area).
- Avoid contact with skin.
- Wear suitable protective clothing, gloves, and eye/face protection.
- Environmental precautions:
 - Prevent spreading over a wide area (e.g., by using containment or oil barriers).
 - Do not contaminate water.
- Methods of containment:
 - Stop the flow of material, if this is without risk.
 - Dike far ahead of spill for later disposal.
- Methods for cleaning up:
 - Remove sources of ignition.
 - Beware of the explosion danger.
 - Small spills: Absorb spillage with non-combustible absorbent material.

7.0 Handling and Storage

7.1 Safe Handling Precautions

- Avoid contact with eyes, skin, and clothing.
- Wear appropriate personal protective equipment.
- Ground container and transfer equipment to eliminate static electric sparks.
- Do not eat, drink, or smoke when using the product.
- Observe good hygiene practices.
- HMIS: health: 1, flammability: 2, physical hazards: 0.

7.2 Conditions for Safe Storage Including Incompatibilities

- Follow rules for flammable liquids.
- Keep away from heat, sparks, and open flame.
- Keep in a cool, well-ventilated place.
- Keep away from food, drink, and animal feeding areas and materials.
- Store away from incompatible materials: strong acids and strong oxidizing agents (see Section 10.0 Stability and Reactivity).

8.0 Exposure Controls/Personal Protection

Occupational Exposure Limits

Component	Limit Type	OSHA PEL ¹	ACGIH TLV	NIOSH REL
Toluene CAS# 108-88-3	STEL	300 ppm (C)	None	150 ppm
	TWA	200 ppm	20 ppm	100 ppm
Benzene CAS# 71-43-2	STEL	5 ppm	2.5 ppm	1 ppm
	TWA	1 ppm	0.5 ppm	0.1 ppm
n-Hexane CAS# 110-54-3	STEL	None	None	None
	TWA	500 ppm	50 ppm	50 ppm
Xylenes CAS# 95-47-6	STEL	None	150 ppm	150 ppm
	TWA	100 ppm	100 ppm	100 ppm
Ethylbenzene CAS# 100-41-4	STEL	None	None	125 ppm
	TWA	100 ppm	20 ppm	100 ppm
Hydrogen Sulfide CAS# 7783-06-04	STEL	20 ppm (C)	5 ppm	10 ppm (C)
	TWA	None	1 ppm	None

TABLE NOTES:

(1) Limits contained in 29 CFR 1910.1000 Z-2 may apply.

STEL=short-term exposure limit, PEL=permissible exposure limit, REL=recommended exposure limit, TLV=threshold limit value, TWA=time-weighted average, C=ceiling, ppm=parts per million.

8.1 Recommended Monitoring Procedures

- Follow standard monitoring procedures per established OSHA or NIOSH methods.
- In the absence of occupational exposure limits for this product, it is recommended that the above-mentioned limits are followed.

8.2 Engineering Controls

- Provide adequate ventilation and minimize the risk of inhalation of vapors and oil mist.
- Provide easy access to water supply and eye wash facilities.
- Use explosion-proof equipment.

8.3 Personal Protective Equipment

- Eye face protection: Wear chemical-resistant goggles/face shield.
- Skin protection: Anti-static, flame resistant, and chemical resistant protective clothing is recommended. Wear protective gloves, such as nitrile or butyl rubber. Be aware that the liquid may penetrate gloves over time; frequent glove change is advised. Suitable gloves can be recommended by the glove supplier.
- Respiratory protection: Use a NIOSH-approved positive pressure self-contained breath apparatus or supplied air breathing apparatus when working with this product or where concentrations may exceed exposure limits. Respirators do not protect against potentially explosive environments. Industrial hygienists should monitor personal exposure to determine the need for a respirator.

8.4 General Hygiene

- When using do not eat, drink, or smoke.
- Wash hands after handling.
- Launder contaminated clothing before reuse.
- Working clothes should be kept separately from other clothes.
- Handle in accordance with good hygiene and safety practices.
- Observe medical surveillance requirements.

9.0 Physical and Chemical Properties

Physical state	Liquid
Form	Liquid
Color	Colorless to brown
Odor	Hydrocarbon
pH	4.3-6.8
Melting point/freezing point	-26.1-0°C
Initial boiling point	100°C
Flash point	28.9-98.9 °C
Lower explosive limit (by volume)	Not available
Upper explosive limit (by volume)	Not available
Vapor pressure	0.1-1.8 psi (Reid vapor pressure at 100°F)
Vapor density	Not available
Relative density	1.01-1.08
Solubility	Soluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available

10.0 Stability and Reactivity

- Reactivity: Not available.
- Chemical stability: Stable at normal conditions.
- Possibility of hazardous reactions: Hazardous polymerization does not occur.
- Conditions to avoid: Heat, sparks, flames, elevated temperatures, contact with incompatible materials.
- Incompatible materials: Water reactive materials. Strong oxidizing agents.

- Hazardous decomposition products: None known.

11.0 Toxicological Information

11.1 Routes of Exposure

- Ingestion: May cause irritation and malaise.
- Inhalation: Breathing high concentrations of vapors may cause dizziness, light-headedness, headache, nausea, and loss of coordination. Continued inhalation may result in unconsciousness.
- Absorption: May be absorbed through the skin.

11.2 Toxicological Effects

- Occupational exposures to the substance or mixture may cause adverse effects.
- Acute effects
 - Hydrogen sulfide, a highly toxic gas, may be present.
 - Skin irritation.
 - Ingestion may cause irritation or malaise.
- Chronic effects
 - Prolonged or repeated contact with skin may cause redness, itching, irritation, eczema, chapping, and oil acne.
 - May cause damage to the liver, kidney, and central nervous system.
 - Contains n-hexane, which can cause prolonged damage to the peripheral nervous system.

11.3 Skin Corrosion/Irritation

- Causes skin irritation.
- Repeated exposure may cause skin dryness and cracking.
- May be absorbed through the skin.

11.4 Eye Irritation

- Not classified.

11.5 Sensitization

- Not a skin sensitizer.

11.6 Local Effects

- Irritating to eyes and skin.

- Dermatitis.
- Irritation of eyes and mucous membranes.
- Irritation of nose and throat.

11.7 Mutagenicity

- May cause genetic defects.

11.8 Carcinogenicity

- May cause cancer.

Substance	Agency	Classification
Benzene	ACGIH	A1 Confirmed human carcinogen
	IARC	1 Carcinogenic to humans
	US NTP Report on Carcinogens	Known to be a human carcinogen
	US OSHA Specifically Regulated Substances (29 CFR 1910.101-1050)	
Toluene and Xylenes	ACGIH	A4 Not classifiable as a human carcinogen
	IARC	3 Not classifiable as to carcinogenicity to humans

11.9 Reproductive Toxicity

- Suspected of damaging fertility.

11.10 Symptoms

- Skin irritation, dermatitis.
- Irritation of eyes and mucous membranes.
- Irritation of nose and throat.

11.11 Specific Target Organ Toxicity – Single Exposure

- Not available.

11.12 Specific Target Organ Toxicity

- Not available.

12.0 Ecological Information

- Ecotoxicity: Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
- Environmental effects: Toxic to aquatic life with long-term effects.
- Bioaccumulative potential: Has the potential to bioaccumulate.

- Mobility in soil: This product mainly contains water which is highly mobile in soil. The organic compounds have varying mobility in soil.
- Water solubility: This product is water soluble.

13.0 Disposal Considerations

This product exempt as an EPA RCRA hazardous waste according to 40 CFR 261. It is the responsibility of the user to determine if the material is considered hazardous for disposal under federal, state, and local regulations.

14.0 Transportation Information

US DOT

UN number	1268
UN proper shipping name	Petroleum distillates, n.o.s. or petroleum products, n.o.s.
Transport hazardous class	3
Packing group	I (BP≤35°C) or II (BP>35°C and FP<23°C) or III (BP>35°C and ≥23°C FP ≤60°C)
Label required	3
Environmental hazards: marine pollutant	Yes
Special provisions	144, 357, IB2, T4, TP1, TP8
Packaging exceptions	150
Packaging non-bulk	202
Packaging bulk	242
Special precautions for the user	Read safety instructions, SDS, and emergency procedures before handling.

IATA

UN number	1268
UN proper shipping name	Petroleum distillates, n.o.s. or petroleum products, n.o.s.
Transport hazardous class(es)	3
Packing group	I (BP≤35°C) or II (BP>35°C and FP<23°C) or III (BP>35°C and ≥23°C FP ≤60°C)
Environmental hazards	Yes
Label required	3
ERG code	3L
Special precautions for the user	Read safety instructions, SDS, and emergency procedures before handling.

IMDG

UN number	1268
UN proper shipping name	Petroleum distillates, n.o.s. or petroleum products, n.o.s.
Transport hazardous class(es)	3
Packing group	I (BP≤35°C) or II (BP>35°C and FP<23°C) or III (BP>35°C and ≥23°C FP ≤60°C)
Environmental hazards: marine pollutant	Yes
Label required	3
EmS	F-E, S-E
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable. However, this product is a liquid and, if transported in bulk, is covered under MARPOL 73/78 Annex I.
General information	This product is covered under the scope of MARPOL Annex I.

15.0 Regulatory Information

U.S.

OSHA	This product is a hazardous chemical, as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA	This product is listed in the TSCA chemical inventory.
SARA Section 304	This product may contain the following component(s) that in the event of a spill may be subject to SARA reporting requirements: benzene, ethyl benzene toluene, xylene, n-hexane.
SARA Section 311/312	The following categories apply to this product: acute health hazard, chronic health hazard, fire hazard.
SARA Section 313	This product may contain the following component(s) that may be subject to reporting on a toxic release inventory: benzene, ethyl benzene, toluene, n-hexane, xylene.
EPA Clean Water Act	Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 800-424-8802.

International Inventories

Country or Region	Inventory Name	On Inventory (Yes/No)
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

16.0 Other Information, Including Date of Preparation of Last Version

Issue date: 07/31/2016

Revision date: 07/31/2016

Version #: 02

References: IARC Monographs. Overall Evaluation of Carcinogenicity (Volumes 1-102) IUCLID. Hazardous Substances Data Bank.

Disclaimer: 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.