









## 6. Accidental Release Measures

### Protective Equipment:

Gloves: Recommended: neoprene and nitrile.  
 Not recommended: polyvinyl chloride PVC.

Clothing: Flame-retardant coverall e.g. Nomex, Proban.

Respirator: NIOSH Approved Supplied-Air Respirator or SCBA where an oxygen-deficient atmosphere may exist.

Eye: Safety glasses with side shields, safety goggles or face shields.

Large spills: wear full protective clothing and NIOSH-approved SCBA with full face-piece.

### Precautions:

- Do not breathe gas/vapors (hydrocarbons).
- May have very low flash point: water spray reduce vapour but may not prevent ignition.

### Emergency Procedures:

- Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Shut off leak/release source, if it can be done safely. Ventilate area of leak or spill.
- Evacuate area of all unnecessary personnel.  
 Small spill: absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.  
 Large spill: dike far ahead of liquid spill for containment and cleanup. Water spray may reduce vapour but may not prevent ignition.
- Consider initial downwind evacuation of at least 300 m (1000 ft). If tank, rail car or tank truck is involved in a fire, ISOLATE & consider initial evacuation all directions for 800 m (½ mile).
- Emergency personnel must wear appropriate personal protective equipment.

### Containment and Clean-up:

- Ground and bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting equipment.
- Use non-sparking tools.
- Take action to prevent static discharges.
- Dike far ahead of liquid spill for containment and cleanup. Collect spillage with inert material (vermiculite, dry sand, earth), and place in coated metal container which can be grounded. Do not use combustible materials, such as sawdust, as absorbent.
- If a leak or spill has not ignited, use water spray to disperse the vapors or divert vapor cloud draft. Do not direct water at spill or source of leak.
- Prevent entry into waterways, sewers, basements or confined areas.
- Dispose of contents/container in accordance with applicable local, provincial/state, and federal regulations.
- Refer to Guide 127 of the Emergency Response Guidebook (Transport Canada/US Dept. of Transportation).

## 7. Handling and Storage

### Handling Precautions:

- Do not breathe gas or vapour. Use only outdoors or in a well-ventilated area.
- Keep away from heat, hot surfaces, sparks, open flames & other ignition sources. No smoking.
- Ground and bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools.
- Take action to prevent static discharges.
- Wear protective gloves/ protective clothing/ eye protection/ face protection.  
Gloves: neoprene, nitrile. Clothing: fire-retardant Nomex, Proban.
- Eye: Safety glasses with side shields or goggles.

### Storage Precautions:

#### Locations

- Store in a well-ventilated place. Keep container tightly closed. Keep cool.
- Storage and use areas should be No Smoking areas. Store locked-up.

#### Containers

- Keep container tightly closed.
- Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition.

## 8. Exposure Controls / Personal Protection

### EXPOSURE LIMITS

	Authority	15 MINS STEL or Ceiling	8-HOURS
Benzene (CAS 71-43-2)	Alberta	2.5 ppm (8 mg/m <sup>3</sup> ) – skin	0.5 ppm (1.6 mg/m <sup>3</sup> ) – skin
	Ontario, BC	2.5 ppm – skin	0.5 ppm – skin
Toluene (CAS 108-88-3)	Alberta	-	50 ppm (188 mg/ m <sup>3</sup> )
	Ontario, BC	-	20 ppm (75 mg/ m <sup>3</sup> )
Xylene (o-,m-,p- isomers) (CAS 1330-20-7)	Alberta	150 ppm (650 mg/ m <sup>3</sup> )	100 ppm (434 mg/m <sup>3</sup> )
	Ontario, BC	150 ppm	100 ppm
Ethylbenzene (CAS 100-41-4)	Alberta	125 ppm (543 mg/ m <sup>3</sup> )	100 ppm (434 mg/ m <sup>3</sup> )
	Ontario, BC	-	20 ppm (87 mg/ m <sup>3</sup> )

### ENGINEERING CONTROLS



- Ventilate area where product is used, stored and/or handled to maintain airborne concentrations below the LEL and OEL, especially in confined spaces.
- Exhaust/ventilate to the outside. Ventilation equipment must be explosion proof.
- Ventilation system should be grounded and separate from other exhaust ventilation systems. Adequate make-up air must be provided.

### PERSONAL PROTECTIVE EQUIPMENT



- Gloves: Recommended: neoprene and nitrile;  
Not recommended: polyvinyl chloride PVC.
- Clothing: Flame-retardant coverall e.g. Nomex, Proban.
- Respirator: NIOSH Approved Supplied-Air Respirator or SCBA.
- Eye: Safety glasses with side shields, safety goggles or face shields.

### 9. Physical and Chemical Properties

<b>Chemical Formula:</b> H <sub>2</sub> O		<b>Molecular Weight:</b> 18.00 g/mole	<b>Physical State:</b> Liquid
<b>Appearance:</b> Slight amber color		<b>N/Av</b>	<b>Odor Threshold:</b> N/Av
<b>pH:</b> ~5-9	<b>Melting/Freezing Point:</b> 0 to -5°C	<b>Boiling Point:</b> 50 to 100°C	<b>Boiling Range:</b> Not available
<b>Flash Point:</b> 0-60°C		<b>Flammability:</b> Yes	<b>Evaporation Rate:</b> Not available
<b>Upper-Lower Explosive Limit:</b> N/Av		<b>Vapor Pressure:</b> Not available	<b>Vapor Density:</b> Not available
<b>Density:</b> ~ 1.00 kg/m <sup>3</sup>		<b>Soluble in water (@20°C):</b> ~100%	<b>Percent Volatile:</b> < 1
<b>Partition Coefficient n-octanol/water:</b> Not available		<b>Auto-Ignition Temperature:</b> Not available	<b>Decomposition Temp.:</b> Not available
<b>Viscosity:</b> 1.0 – 2.3 cSt (@15°C)		<b>Henry's Law Constant:</b> Not available	<b>Isobaric Heat Capacity:</b> Not available

### 10. Stability and Reactivity

<b>Reactivity:</b> Avoid incompatible materials: may react violently with oxidizers.
<b>Chemical Stability:</b> Stable under normal temperatures and pressures.
<b>Possibility of Hazardous Reactions:</b> Polymerization has not been reported to occur under normal temperature and pressure conditions.
<b>Conditions to Avoid:</b> Extreme temperatures and incompatible materials.
<b>Incompatible Materials:</b> <ul style="list-style-type: none"> <li>• Strong oxidizing agents.</li> </ul>
<b>Hazardous Decomposition Products:</b> <ul style="list-style-type: none"> <li>• No known decomposition product of this material.</li> <li>• Combustion of hydrocarbon forms carbon monoxide, carbon dioxide, sulphur dioxide, and acrid smoke.</li> </ul>

### 11. Toxicological Information

Exposure Route	Acute Health Effects	Symptoms of Exposure
<b>Inhalation:</b>	May irritate respiratory tract	Mild shortness of breath to slight dizziness
<b>Skin:</b>	In liquid form: skin irritation	Redness, itchy skin
<b>Eye:</b>	May cause eye irritation	Irritation, tearing, visual disturbances
<b>Ingestion:</b>	Not expected to be a route of exposure.	

**Chronic Exposure:**
**Inhalation:**

Repeated or prolonged exposure may cause respiratory tract irritation.

**Skin:**

Not known to be a skin-sensitizer. Repeated and prolonged contact may cause dry, red, cracked skin (dermatitis).

**Medical Conditions Aggravated by Exposure:**

Possibly asthma.

<b>Sensitization:</b> No	<b>Reproductive Toxicology:</b> Yes	<b>Teratogenicity:</b> No	<b>Mutagenicity:</b> Yes
<b>Carcinogenicity:</b> No	<b>Irritancy:</b> No	<b>Target Organs:</b> Repeated exposure: no data available	

**Lethality Tests:**

Chemical Name	CAS No.	LD50	LC50
Benzene	71-43-2	Oral Rat 810 mg/kg Dermal Rabbit >8200 mg/kg	Rat 44.66 mg/L 4 h
Toluene	108-88-3	Oral Rat 2600 mg/kg Dermal Rabbit 12000 mg/kg	Rat 12.5 mg/L 4 h
Xylenes	1330-20-7	Oral Rat 3500 mg/kg Dermal Rabbit >4350 mg/kg	Rat 29.08 mg/L 4 h
Ethyl benzene	100-41-4	Oral Rat 3500 mg/kg Dermal Rabbit 15400 mg/kg	Rat 17.4 mg/L 4 h



## 12. Ecological Information

<b>Persistence &amp; Degradability:</b> No.	<b>Bioaccumulative Potential:</b> No.
<b>Mobility:</b> No data available.	<b>Other Adverse Effects:</b> See below.

**Eco Toxicity Tests:**

Chemical Name	CAS No.		
Benzene	71-43-2	Fish	LC50 96 h <i>Lepomis macrochirus</i> 22.49 mg/L [static] LC50 96 h <i>Pimephales promelas</i> 22330 - 41160 µg/L [static]
Toluene	108-88-3	Fish	LC50 96 h <i>Pimephales promelas</i> 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h <i>Pimephales promelas</i> 12.6 mg/L [static]
Xylene	1330-20-7	Fish	LC50 96 h <i>Pimephales promelas</i> 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h <i>Pimephales promelas</i> 12.6 mg/L [static] LC50 96 h <i>Pimephales promelas</i> 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h <i>Pimephales promelas</i> 12.6 mg/L [static]
Ethylbenzene	100-41-4	Fish	LC50 96 h <i>Lepomis macrochirus</i> 32 mg/L [static] LC50 96 h <i>Pimephales promelas</i> 7.55 - 11 mg/L [flow-through]

## 13. Disposal Considerations

**Waste Disposal:**

- Dispose of waste material at an approved waste treatment/disposal facility in accordance with applicable local, provincial, and federal regulations.
- Do not dispose of waste with normal garbage, or to sewer systems.

## 14. Transport Information

### TDG (CANADA) CLASSIFICATION

**PROPER SHIPPING NAME:** Flammable Liquid, N.O.S. (Trace hydrocarbons)

**CLASS:** 3

**UN NUMBER:** UN1993

**PACKING GROUP:** II

**LABEL/PLACARD:**



### **Special Provision:** 16

*The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posted by the dangerous goods must be shown, in parenthesis, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation)*

#### **Caution:**

- *As produced water is traditionally hauled by trucks that previously transported other products (e.g. crude, condensate) and not steamed or rinsed, the product remaining in these trucks may change the composition of this product (Sour, Flammable Produced Water)*
- *The Consignor must review the content remaining in the incoming truck, by examining “residue-last-contained”, and may need to placard the produced water differently*

## 15. Regulatory Information

### CANADA

	Benzene	Toluene	Xylenes	Ethylbenzene
CAS	71-43-2	108-88-3	1330-20-7	100-41-4
DSL	yes	yes	yes	yes
NPRI	yes	yes	yes	yes
E2	yes	yes	yes	yes

**16. Other Information**

Prepared for: Keyera Health and Safety  
 Issue Date/ Revision No: July 1, 2020, Original

<b>Revisions:</b>	<b>Dates:</b>	<b>Main Changes</b>
• Original	July 1, 2020 August	- none
1 <sup>st</sup> revision	17, 2021	Update address and phone number

**Glossary**

- ACGIH** – American Conference of Governmental Industrial Hygiene
- DOT** – US Department of Transportation
- DSL** – Domestic Substance List (Canada)
- E2** – Environmental Emergencies (Canada)
- GHS** – Globally Harmonized System
- IARC** – International Agency for Research on Cancer
- IDLH** – Immediately Dangerous to Life and Health
- NIOSH** – National Institute for Occupational Safety & Health
- NPRI** – National Pollutant Release Inventory (Canada)
- NTP** – National Toxicology Program
- OSHA** – Occupational Safety & Health Administration of the US Depart of Labour
- PEL** – Permissible Exposure Limit
- SARA** – Superfund Amendments and Reauthorization Act of 1986
- STEL** – Short Term Exposure Limit
- TRI** – US Toxic Release Inventory
- TSCA** – Toxic Substance Control Act
- TWA** – Time Weighed Average

**Disclaimer of Expressed and Implied Warranties**

The information presented in the Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. However, neither Keyera nor its affiliates assume any liability whatsoever for the accuracy or completeness of the information contained herein. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use.

~ End of Safety Data Sheet ~