



Contaminated Soil Containing Hydrocarbons

SAFETY DATA SHEET

Date of Preparation: December 5, 2017

Section 1: IDENTIFICATION

Product Name: Contaminated Soil Containing Hydrocarbons
Synonyms: Not available.
Product Use: Waste stream.
Restrictions on Use: Not available.
Manufacturer/Supplier: Gibson Energy ULC
1700, 440 – 2nd Ave. SW
Calgary, Alberta
T2P 5E9
Phone Number: (403) 206-4000
Emergency Phone: Canutec (613) 996-6666 or Cellular *666
Date of Preparation of SDS: December 5, 2017

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Flammable Solids, Category 1
Skin Irritation, Category 2
Eye Irritation, Category 2B
Germ Cell Mutagenicity, Category 1B
Carcinogenicity, Category 1A
Toxic to Reproduction, Category 2
Specific Target Organ Toxicity (Single Exposure), Category 3 - Narcotic Effects
Specific Target Organ Toxicity (Repeated Exposure), Category 1

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard

Statements:

Flammable solid.
Causes skin irritation.
Causes eye irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause drowsiness or dizziness.
Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.



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Ground/bond container and receiving equipment.
 Use explosion-proof electrical, ventilating, and lighting equipment.
 Do not breathe mist, vapors, or spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves, protective clothing and eye protection.

Response: If on skin: Wash with plenty of soap and water.
 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If exposed or concerned: Get medical advice/attention.
 If skin irritation occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 In case of fire: Use dry chemical, CO₂, sand, earth, water spray or regular foam to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200). This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS
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Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Petroleum	Not available.	8002-05-9	60 - 100 *

* With the exception of any water present, the liquid component of the contaminated soil is made up of 100% Petroleum.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. If breathing or the heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Get medical attention immediately.

Acute and delayed symptoms and effects: May cause drowsiness or dizziness. May cause respiratory irritation. Signs/symptoms may include



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cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness.

Eye Contact: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Acute and delayed symptoms and effects: Causes eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If free liquids are swallowed: Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If breathing or the heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Get medical attention immediately.

Acute and delayed symptoms and effects: May be fatal if free liquids are swallowed and enter airways. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: If exposed or concerned: Get medical advice/attention.

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Flammable/combustible material. May be ignited by friction, heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Cool containers with flooding quantities of water until well after fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.



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Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge: This material is sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, sand, earth, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Do not use straight streams.

Products of Combustion: Oxides of carbon. Aldehydes.

Protection of Firefighters: Fire may produce irritating and/or toxic gases. Contact may cause burns to skin and eyes. Contact with molten substance may cause severe burns to skin and eyes. Runoff from fire control may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, and hot surfaces. – No smoking. Ground/bond container and receiving equipment. Do not breathe mist, vapors, or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. See Section 8 for information on Personal Protective Equipment.



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Storage:

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Petroleum [CAS No. 8002-05-9]

ACGIH: A2; Exposure by all routes should be carefully controlled to levels as low as possible (2009); For Mineral oil, excluding metal working fluids; Poorly and mildly refined

OSHA: 500 ppm (TWA), 2000 mg/m³ (TWA);
400 ppm (TWA) [Vacated];

Benzene [CAS No. 71-43-2]

ACGIH: 0.5 ppm (TWA); 2.5 ppm (STEL); Skin; A1; BEI (1996)

OSHA: 1 ppm (TWA); 5 ppm (STEL);

Toluene [CAS No. 108-88-3]

ACGIH: 20 ppm (TWA); A4; BEI (2006)

OSHA: 200 ppm (TWA); 300 ppm (C); 500 ppm (Peak) (Maximum duration: 10 minutes.)
100 ppm (TWA); 150 ppm (STEL) [Vacated];

Ethylbenzene [CAS No. 100-41-4]

ACGIH: 20 ppm (TWA); A3; BEI (2010)

OSHA: 100 ppm (TWA), 435 mg/m³ (TWA);
125 ppm (STEL) [Vacated];

Xylene [CAS No. 1330-20-7]

ACGIH: 100 ppm (TWA); 150 ppm (STEL); A4; BEI (1992)

OSHA: 100 ppm (TWA), 435 mg/m³ (TWA);
150 ppm (STEL) [Vacated]

Hexane [CAS No. 110-54-3]

ACGIH: 50 ppm (TWA); Skin, BEI (1996)

OSHA: 500 ppm (TWA), 1800 mg/m³ (TWA); Skin.
50 ppm (TWA) [Vacated];

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

C: Ceiling

Engineering Controls:

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits. Use explosion-proof electrical, ventilating,



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and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator with organic vapor cartridge, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Soil (Black, Brown, Grey).
Colour:	Black, Brown, Grey.
Odour:	Hydrocarbon.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (as supplied):	6 to 11
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Point:	Not available.
Flash Point:	> 60 °C (140 °F) (PMCC)



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Evaporation Rate:	Not available.
Flammability (solid, gas):	Flammable solid.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Incompatible Materials:	Strong acids. Strong oxidizers. Chlorine.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral:	Not available.
Dermal:	Not available.



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Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Petroleum	8002-05-9	4300 mg/kg (rat)	Not available.	Not available.
Benzene	71-43-2	930 mg/kg (rat)	> 9400 µl/kg (rabbit)	10000 ppm (rat); 7H
Toluene	108-88-3	600 mg/kg (rat)	14.1 mL/kg (rabbit)	49000 mg/m ³ (rat); 4H
Ethylbenzene	100-41-4	3500 mg/kg (rat)	17800 µl/kg (rabbit)	Not available.
Xylene	1330-20-7	> 1700 mg/kg (rat)	4300 mg/kg (rabbit)	5000 ppm (rat); 4H
Hexane	110-54-3	25000 mg/kg (rat)	Not available.	48000 ppm (rat); 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Blood. Bone marrow. Liver. Reproductive system. Nervous system.

Symptoms (including delayed and immediate effects)

- Inhalation:** May cause drowsiness or dizziness. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness
- Eye:** Causes eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin:** Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** May be fatal if free liquids are swallowed and enter airways. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Central nervous system. Cardiovascular system. Blood. Bone marrow. Liver. Kidneys. Reproductive system. Nervous system.

Chronic Effects: Hazardous by OSHA/WHMIS criteria. May cause chronic effects. Prolonged or repeated contact may dry skin and cause irritation. High vapour concentrations, generally greater than 10% by volume, may sensitize the heart and lead to lethal cardiac arrhythmias. Repeated



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dermal application of crude oils in rats produced systemic toxicity in blood, liver, thymus and bone marrow. Reports of chronic poisoning with benzene, Toluene, Ethylbenzene or Xylenes describe anemia, decreased blood cell count and bone marrow hypoplasia. Liver and kidney damage may occur. Chronic inhalation exposure to xylene causes mid-frequency hearing loss in laboratory animals. Xylene reacts synergistically with n-hexane to enhance hearing loss. Chronic inhalation of n-Hexane may cause peripheral nerve disorders and central nervous system effects.

Carcinogenicity: May cause cancer. Lifetime skin painting studies in animals with whole crude oils and crude oil fractions have produced tumours in animals following prolonged and repeated skin contact. Chronic exposure to benzene has been associated with an increased incidence of leukemia and multiple myeloma (tumour composed of cells of the type normally found in the bone marrow).

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Petroleum	A2	Group 3	List 1	OSHA Carcinogen.	Listed.
Benzene	A1	Group 1	List 1	OSHA Carcinogen.	Listed.
Toluene	A4	Group 3	Not listed.	Not listed.	Not listed.
Ethylbenzene	A3	Group 2B	Not listed.	OSHA Carcinogen.	Listed.
Xylene	A4	Group 3	Not listed.	Not listed.	Not listed.

Mutagenicity: May cause genetic defects.

Reproductive Effects: Suspected of damaging fertility or the unborn child. Studies exist which report a link to crude oil and reproductive effects including menstrual disorders.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Possible risk of harm to the unborn child. Repeated dermal application of crude oils to pregnant rats produced maternal toxicity and fetal developmental toxicity and fetal tumours. Benzene and Xylenes have caused adverse fetal effects in laboratory animals. Exposure to Toluene may affect the developing fetus.

Toxicologically Synergistic Materials: Xylene reacts synergistically with n-hexane to enhance hearing loss.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Petroleum: 21 and 41 mg/l, 96 hr., Rainbow trout;
 Petroleum; 2.7 and 4.1 mg/l, 96 hr., Mysid;
 Petroleum: 122 and 528 ml/kg, 96 hr., Algae.

Persistence / Degradability: Not available.



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Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

If no free liquid at time of packaging but contains crude oil:

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN3175, SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Petroleum), 4.1, PG II

Class: 4.1

UN Number: UN3175

Packing Group: II

Label Code:



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN3175, SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Petroleum), 4.1, PG II

Class: 4.1

UN Number: UN3175

Packing Group: II

Label Code:



If free flammable liquids are present:

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1993, FLAMMABLE LIQUIDS, N.O.S. (Petroleum), 3, PG II

Class: 4.1

UN Number: UN3175

Packing Group: II

Label Code:





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Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1993, FLAMMABLE LIQUIDS, N.O.S. (Petroleum), 3, PG II

Class: 4.1

UN Number: UN3175

Packing Group: II

Label Code:



If no free liquid, no petroleum and no other contaminants are present:

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.



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SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Benzene	Not listed.	Not listed.	10	313	U019	Not listed.
Toluene	Not listed.	Not listed.	1000	313	U220	Not listed.
Ethylbenzene	Not listed.	Not listed.	1000	313	Not listed.	Not listed.
Xylene	Not listed.	Not listed.	100	313	U239	Not listed.
Hexane	Not listed.	Not listed.	5000	313	Not listed.	Not listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Benzene	71-43-2	E
Toluene	108-88-3	Listed.
Ethylbenzene	100-41-4	Listed.
Xylene	1330-20-7	Listed.
Hexane	110-54-3	Listed.

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Petroleum	8002-05-9	SHHS
Benzene	71-43-2	SHHS
Toluene	108-88-3	SHHS
Ethylbenzene	100-41-4	SHHS
Xylene	1330-20-7	SHHS
Hexane	110-54-3	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Benzene	71-43-2	ES
Toluene	108-88-3	E
Ethylbenzene	100-41-4	E
Xylene	1330-20-7	E
Hexane	110-54-3	Listed.

Note: E = Environmental Hazard; S = Special Hazardous Substance



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California
California Prop 65:



WARNING This product can expose you to chemicals including Toluene, Benzene, Ethylbenzene, and Polycyclic Aromatic Hydrocarbons which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.

Date of Preparation of SDS: December 5, 2017

Version: 1.1

MSDS Prepared by: Deerfoot Consulting Inc.

Phone: (403) 720-3700