

SAFETY DATA SHEET

According to OSHA HCS 2012 (29 CFR 1910.1200)

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION


Product Identifier: Natural Gas Liquids
Other means of identification: LP Gas, Y-Grade, LPG, Raw Feed, Demethanized Raw Feed Mix
CAS Number: 64741-48-6
SDS Number:
Product type: Liquid
Identified uses: Industrial Use

Manufacturer:	SDS Information:	Emergency Health and Safety Number:
TreeTop Midstream, LLC.	Phone: 601.898.7444	(800) 696-2940 (24 hours)
602 Crescent Place	Fax: 601.898.7445	
Ridgeland, MS 39157	URL: www.treetopmidstream.com	

SECTION 2: CHEMICAL HAZARDS IDENTIFICATION

GHS Classification:

H224 – Flammable Liquids, Category 1
H304 – Aspiration Hazard, Category 1
H315 – Skin Corrosion/Irritation, Category 2
H336 – Specific Target Organ Toxicity (single exposure), Category 3, Central Nervous System
H340 – Germ Cell Mutagenicity, Category 1B
H350 – Carcinogenicity, Category 1B
H361 – Reproductive Toxicity, Category 2
H372 – Specific target organ toxicity (repeated exposure) – Category 1, Blood
H373 – Specific target organ toxicity (repeated exposure) – Category 2, Nervous System
H411 – Chronic Aquatic Toxicity, Category 2

GHS Label Elements	
Hazard Symbol(s):	
Signal Word:	Danger
Hazard Statement(s):	H224: Extremely flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness. H340: May cause genetic defects. H350: May cause cancers. H361: Suspected of damaging fertility or the unborn child.

	<p>H H372: Causes damage to organs (Blood) through prolonged or repeated exposure. H373: May cause damage to organs (Nervous system) through prolonged or repeated exposure. 411: Toxic to aquatic life with long lasting effects.</p>
<p>Precautionary Statements:</p>	<p>Prevention P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood P210: Keep away from heat/sparks/open flames/ hot surfaces. - No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use with explosion-proof electrical/ventilating/lighting/ equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing dust/fume/gas/mist/vapors/spray. P264: Wash thoroughly after handling. P271: Use only outdoors or in a well-ventilated area P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. Response: P301+P350: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331: Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P308:+P313: IF exposed or concerned: Get medical advice/attention. P332+P313: If skin irritation occurs: Get medical advice/attention. P362: Take off contaminated clothing and wash before reuse. P370+P378: In case of fire: Use dry chemical, carbon dioxide, or foam for extinction. P391: Collect spillage. Storage: P403+P233: Store in well ventilated place. Keep container tightly closed. P403+P235: Store in a well-ventilated place. Keep cool. P405: Store locked up. Disposal: P501: Dispose of contents/container to approved disposal facility.</p>
<p>Other Hazards:</p>	<p>Repeated or prolonged dermal contact may cause defatting and drying of the skin.</p>

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	% By Weight
Natural Gas (petroleum), raw liquid mix	64741-48-6	100
Iso-Pentane	78-78-4	0-25
N-Pentane	109-66-0	0-25
Benzene	71-43-2	0.1-5
Toluene	108-88-3	0.1-5
Ethylbenzene	100-41-4	0.1-5
O, M & P Xylene	95-47-6 / 108-38-3 / 106-42-3	0.1-5
n-Butanes	106-97-8	0-45
Iso-Butane	75-28-5	0-40
Hexanes	110-54-3	0-60
Methane	74-82-8	0-5
Ethane	74-84-0	1-80
Propane	74-98-6	1-80

All concentrations are percent by weight unless ingredient is a gas, gas concentrations are percent by volume. Data are typical values based on material tested, but may vary from sample to sample.

SECTION 4: FIRST AID MEASURES

Eye Contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove contact lenses if present and easy to do. Continue to rinse for at least 15 minutes. Get medical attention if eye irritation persists.

Inhalation:

If irritation, headache, nausea, or drowsiness occurs, remove victim from the source of exposure and into fresh air. If breathing is difficult, oxygen should be administered by qualified personnel. Seek medical attention if respiratory irritation persists.

Skin Contact:

If on clothes, remove clothing if possible. Wash skin with plenty of soap and water until no evidence of the chemical remains (at least 15 minutes). If skin irritation persists, call a physician. .

Ingestion:

Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Seek immediate medical attention.

Most Important Symptoms and Effects:

Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation, fatigue, and skin and eye irritation



Delayed: Dry skin and possible irritation with repeated or prolonged dermal exposure

Notes to Physician:

May sensitize the heart to epinephrine or other circulating catecholamines so that arrhythmias may occur. Careful consideration is essential preceding administration of epinephrine, cardiac stimulants or other treatment. If sympathomimetic are administered, observe for the development of cardiac arrhythmias.

SECTION 5: FIRE-FIGHTING MEASURES

NFPA Hazard Class:
Health – 2
Fire – 4
Reactivity – 0
Specific Hazard – N/A

Extinguishing Media:

Carbon dioxide, foam or dry chemical is the recommended media. Water spray is recommended to cool or protect exposed materials or structures.

Specific Hazards arising from the chemical:

Severe explosion and fire hazard. Contents under pressure, so containers may rupture or explode if exposed to heat. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. This product will float and can be reignited on surface water.

Thermal Decomposition Products or Combustion:

Oxides of carbon, oxides of sulfur, and oxides of nitrogen.

Special Protective Actions for Fire-Fighters:

Move container from fire area if it can be done without risk. Cool containers from a safe distance with water spray until well after the fire is out. Stay away from ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry. Withdraw immediately in case of rising sound from venting safety device. Do not attempt to extinguish fire unless flow of material can be stopped first. Be aware that a BLEVE (Boiling Liquid Expanding Vapor Explosion) may occur unless surfaces are kept cool with water. Apply water from a protected location or from a safe distance. Stay upwind and keep out of low areas. Evacuate if fire gets out of control or containers are directly exposed to fire.

Special Protective Equipment for Fire-Fighters:

Emergency responders should wear proper protective equipment and a positive pressure self-contained breathing apparatus.



SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Extremely flammable; avoid heat, flames, sparks, and other sources of ignition. Spills of liquids can create a fire hazard and may form an explosive atmosphere. Vapors may travel long distances to a source of ignition where they can ignite, flash back, or explode. Stay upwind from release, and avoid direct contact. Ventilate closed spaces before entering. Vapors are heavier than air and can accumulate in low areas. Notify persons downwind for large spills.

Environmental Precautions:

Prevent further release if it can be done safely. Prevent material from entering sewers and drains. If the material contaminates waterways or drains then notify appropriate authorities.

Methods and Material for Containment and Cleaning up:

Contain spillage using spark-proof tools and explosion-proof equipment. Dike far ahead of spill for later recovery or disposal. If spilled on water, remove with appropriate methods (skimming, booms, absorbents). Place in container for disposal according to local / national regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling:

Ground / bond any equipment used in handling the material. Only use non-sparking tools; keep away from heat, sparks, open flame or other ignition source. Use only explosion-proof electrical (ventilation, lighting, etc.) equipment Do not allow eating, drinking, or smoking in the area. Provide adequate ventilation and/or exhaust; do not breathe vapors or dust. Avoid contact with skin or eyes. Empty containers retain product residue and can be hazardous; do not puncture or incinerate container.

Conditions for Safe Storage:

Store in accordance with local regulations. Store in a segregated and approved area that is cool, dry, well-ventilated, and away from direct sunlight or any ignition sources. Keep container tightly closed and sealed. Store separate from any incompatible material (Section 10).

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	OSHA PEL (ppm)	ACGIH TLV (ppm)	Other
Natural Gas (petroleum), raw liquid mix	None	300 (gasoline)	
Iso-Pentane	1000	1000	120 ppm REL (NIOSH) 1500 ppm IDLH (NIOSH)
N-Pentane	1000	1000	120 ppm REL (NIOSH) 1500 ppm IDLH (NIOSH)
Benzene	1.0	0.5	0.1 ppm REL (NIOSH) 500 ppm IDLH (NIOSH)

Toluene	200	20	100 ppm REL (NIOSH) 500 ppm IDLH (NIOSH)
Ethylbenzene	100	20	100 ppm REL (NIOSH) 800 ppm IDLH (NIOSH)
O, M & P Xylene	100	100	100 ppm REL (NIOSH) 900 ppm IDLH (NIOSH)
n-Butanes	None	1000 (STEL)	800 ppm REL (NIOSH) Narcosis, Asphyxiant
Iso-Butane	None	1000 (STEL)	800 ppm REL (NIOSH) Narcosis, Asphyxiant
Hexanes	500	50	50 ppm REL (NIOSH) 1100 ppm IDLH (NIOSH)
Methane	1000	None	Asphyxiant
Ethane	None	None	Asphyxiant
Propane	1000	1000	1000 ppm REL (NIOSH) 2100 ppm IDLH (NIOSH) Asphyxiant

Engineering Controls:

General or local exhaust ventilation and other forms of engineering controls are the preferred means for keeping worker exposure to airborne contaminants below any recommended or statutory limits. If ventilation cannot reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used.

Hygiene Measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing.

Eye/Face Protection:

Safety eyewear (such as splash goggles) that meets ANSI Z.87.1 should be used to avoid exposure to liquid splashes, mists, gases, or dusts. Face shields may be necessary if contact is possible. Eye wash and quick-drench shower facilities should be available.

Hand Protection:

Chemical resistant, impervious gloves should be worn at all times when handling chemical products. Consider the parameters specified by the glove manufacturer, check that the gloves are still retaining their protective properties prior to use. Gloves should be discarded if there is any degradation or breakthrough.

Body Protection:

Wear flame retardant anti-static protective clothing. When there is a risk of liquid exposure, wear cold insulating clothing.

Respiratory Protection:

A NIOSH approved air purifying respirator with an appropriate cartridge or canister may be appropriate under certain conditions where airborne concentrations are expected to exceed exposure limits.

Appropriate respirator selection should be made by a qualified professional as part of a comprehensive respiratory program as described in 29 CFR 1910.134. Protection provided by air-purifying respirators is limited and should not be used in atmospheres deficient in oxygen or where airborne concentrations are immediately dangerous to life or health. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known or any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless	Flammability (Solid, gas):	Extremely Flammable
Physical Form:	Liquid	Upper Explosive Limit:	13%
Odor:	Hydrocarbon	Lower Explosive Limit:	1.4%
Odor Threshold:	No Data	Vapor Pressure:	14-600psi @ 38°C
pH:	Not Applicable	Vapor Density (air=1):	1.04-4
Melting Point:	No Data	Viscosity:	No Data
Boiling Point:	No Data	Partition Coefficient (n-octanol/water):	No Data
Flash Point:	-105°F to -211°F -76°C to -135°C	Auto Ignition Temperature:	800°F (427°C)
Evaporation Rate:	Not Available	Decomposition Temperature:	No Data
Solubility in Water:	Negligible	Volatile Percent:	100%
Solubility in Other Solvents:	No Data	Specific Gravity (Water =1):	0.37-0.7

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Stable at normal ambient temperatures and pressure
Chemical Stability:	Stable at normal ambient temperatures and pressure
Possibility of Hazardous Reactions:	Hazardous reactions are not anticipated
Conditions to Avoid:	Avoid all possible sources of ignition. Containers may rupture or explode if exposed to heat.
Incompatible Materials:	Avoid contact with acids and oxidizing materials.
Hazardous Decomposition Products:	Hazardous decomposition is not anticipated under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects:

Acute Toxicity:

Product Name	Result	Species	Dose	Exposure
Natural Gas Liquids (based on similar material)	Oral LD ₅₀ >5,000 mg/kg	Rat (male and female)	5,000 mg/kg	
	Inhalation LC ₅₀ (vapor) > 5160 mg/m ³	Rat (male and female)	5,160 mg/m ³	4 hours
	Dermal LD ₅₀ > 2,000	Rabbit (male and female)	2,000 mg/kg	

		female)		
Components				
n-Pentane	Oral LD ₅₀ >2,000 mg/kg	Rat (male and female)	2,000 mg/kg	
n-Pentane	Inhalation LC ₅₀ (vapor) > 20,000 ppm	Rat (male)		4 hours
n-Hexane	Inhalation LC ₅₀ (vapor) >31.86 mg/L	Rat (male and female)	31.86 mg/L	4 hours
n-Hexane	Dermal LD ₅₀ > 2,000 mg/kg	Rabbit (male and female)	2,000 mg/kg	
Toluene	Oral LD ₅₀ >5,000 mg/kg	Rat (male)	0, 4,000, 4,560, 5,200, 5,930, or 6,,760 mg/kg	
Toluene	Inhalation LC ₅₀ (vapor) > 20 mg/L	Rat (male and female)	7, 31.6, 52.2, 78.3, 104.4 mg/L	4 hours
Toluene	Dermal LD ₅₀ > 5,000 mg/kg	Rabbit (male)		
Benzene	Oral LD ₅₀ > 2,000 mg/kg	Rat (male)		
Benzene	Dermal LD ₅₀ >8,260 mg/kg	Rabbit		
Benzene	Inhalation LC ₅₀ (vapor) 13,700 ppm	Rat (female)	11,500 -15,500 ppm	4 hours
O, M& P-Xylenes	Oral LD ₅₀ -5,241 mg/kg	Rat (female)		
O, M& P-Xylenes	Inhalation LC ₅₀ (vapor) – 6,247 mg/L	Rat (male and female)		4 hours
O, M& P-Xylenes	Dermal LD ₅₀ -12,126 mg/kg	Rabbit (male)		

Skin Irritation/Corrosion: Irritating to irritation.

Serious Eye Damage /Irritation: Vapors may cause eye irritation.

Respiratory/Skin Sensitization: Not expected to be a respiratory or skin sensitizer.

Mutagenicity: May cause mutagenic effects.

Carcinogenicity: May cause cancer.

Reproductive Toxicity: May cause adverse reproductive effects. Suspected of damaging fertility or the unborn child.

Developmental/Teratogenicity: Not expected to cause developmental/teratogenic effects.

Specific Target Organ Toxicity (single exposure): May cause central nervous system effects following single exposure.

Specific Target Organ Toxicity (repeated exposure): May affect the nervous system and blood following repeated or prolonged exposures.

Aspiration Hazard: May be fatal if swallowed and enters airways. Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

Information on the Likely Routes of Exposure:

Potential Acute Health Effects:

Eye Contact: May cause eye irritation at high vapor concentrations.

Inhalation: May cause drowsiness and dizziness.



Skin Contact: May cause irritation.
Ingestion: May cause severe lung damage or even death if swallowed and enters airways.

Symptoms related the Physical, Chemical and Toxicological Characteristics: May cause headache, dizziness, fatigue, nausea and vomiting at high vapor concentrations. Repeated or prolonged skin contact may cause redness, irritation, and dry skin. May be fatal if swallowed and enters airways.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure: Central nervous system effects and skin irritation; may cause reproductive, mutagenic, carcinogenic effects.

Potential Chronic Health Effects:

General: May cause central nervous system effects.
Carcinogenicity: May cause cancer.
Mutagenicity: May cause heritable genetic effects.
Teratogenicity: May cause harm to the unborn child.
Developmental Effects: May cause adverse effects on development.
Fertility Effects: May cause adverse effects on fertility.

Numerical Measures of Toxicity: Not available

Component Toxicology:

Mutagenicity:

Component	Type of Study	In Vitro/In Vivo	Metabolic Activation	Result
Natural Gas Liquids (data based on similar material)	Gene Mutation	In Vitro	With and Without	Negative
Natural Gas Liquids (data based on similar material)	Ames Test	In Vitro	With and Without	Negative
Natural Gas Liquids (based on similar material)	Chromosome Aberration Test	In Vivo	Not Applicable	Negative
Benzene	Gene Mutation	In Vitro	Without	Positive
Benzene	Chromosome Aberration Test	In Vitro	With and Without	Positive
Benzene	Mammalian Erythrocyte Micronucleus Test	In Vivo	Not Applicable	Positive
Benzene	Bone Marrow Chromosome Aberration Test	In Vivo	Not Applicable	Positive

Repeated Dose:

Natural Gas Liquids (64741-48-6) (data based on similar material): Baseline gasoline vapor condensate was administered by inhalation to rats for 6 hours/day, 5 days/week for 13 weeks at concentrations of

2,000, 10,000, and 20,000 mg/m³. Nasal effects were indicated in male and female animals and nephropathy was noted in male animals. All exposure levels caused hydrocarbon nephropathy in male rats, which is specific to male rats and are not considered to be of biological relevance to humans. Based on this study, the systemic no observed adverse effect concentration (NOAEC) was determined to be greater than 20,000 mg/m³, and the local NOAEC was considered to be 10,000 mg/m³.

Benzene (71-43-2): Repeated inhalation of male and female rats to 0, 1, 10, 30 or 300 ppm benzene for 6 hours/day, 5 days/week for 13 weeks resulted in decreased lymphocyte counts and increase in neutrophil percentages. The NOAEC was 30 ppm for both male and female rats.

Toluene (108-88-3): Male and female rats were exposed by inhalation to 0, 30, 100 or 300 ppm Toluene 6 hours/day, 5 days/week for 6, 12 or 18 months. There were no toxicologically significant effects on body weight, clinical signs, ophthalmoscopy, hematology, blood and urine clinical chemistry, organ weights or gross and microscopic pathology. The no observed adverse effect concentration (NOAEC) for chronic systemic and local toxicity from this study was 300 ppm (1,131 mg/m³).

Ethylbenzene (100-41-4): Male and female rats were exposed by inhalation to 0, 100, 400, 800 ppm ethylbenzene for 6 hours/day, 5 days/week for 4 weeks. Increased liver weight was observed in both sexes exposed to 800 ppm ethylbenzene; however, as the observed effects are minimal and considered adaptive, the NOAEC in the study was considered to be 800 ppm.

O, M&P- Xylenes (95-47-6 / 108-38-3 / 106-42-3): No systemic toxicity effects were observed in male rats exposed to 0, 0.77, 2.0 or 3.5 mg/L (0, 180, 460 or 810 ppm) mixed xylenes 6 hours/day, 5 days/week for 13 weeks. Based on this study, a NOAEC of 810 ppm (3,515 mg/m³) was determined for systemic effects.

n-Hexane (110-54-3): Mice were exposed by inhalation to 0, 500, 1000, 4000, or 10000 ppm n-hexane for 6 hours/day, 5 days/week for 13 weeks. Decrease locomotion was observed in female mice at 1,000 ppm. Nasal lesions were seen in females in all exposure groups and males exposed to 1,000 ppm. The LOAEC was determined to be 500 ppm for females and 1,000 ppm for males. The NOAEC for males was 500 ppm.

Reproductive/Developmental Toxicity (Inhalation):

Benzene (71-43-2): Rats were exposed to 0, 1, 10, 40 or 100 ppm benzene by inhalation for 6 hours/days up to day 20 of gestation. Reduced fetal weights and lengths were observed at 100 ppm. The NOAEC for slight fetotoxicity was 40 ppm.

Toluene (108-88-3): In a combined two-generation fertility and teratogenicity inhalation study, male and female rats were exposed to toluene at 0, 100, 500 or 2,000 ppm (0, 375, 1,875 or 7,500 mg/m³) for 6 hours/day, 7 days/week during pre-mating, mating, gestation, and lactation. Overall, toluene did not induce adverse effects on fertility, reproductive performance, or maternal or pup behaviors. Reduced fetal body weight and skeletal variations were observed in the 2,000 ppm exposure group. Based on this study, the NOAEC for parental toxicity and off-spring toxicity was 500 ppm (1,875 mg/m³). The NOAEC for effects on fertility was 2,000 ppm (7,500 mg/m³), the highest dose tested.

Ethylbenzene (100-41-4): In a two generation study, male and female rats were exposed via inhalation to ethylbenzene at levels of 25, 100 and 500 ppm (6 hours/day). There were no adverse effects on reproductive or developmental endpoints at dose levels up to 500 ppm ethylbenzene. The NOAEC for this study is considered to be 500 ppm for parental systemic toxicity, reproductive toxicity and developmental effects.

n-Hexane (110-54-3): Male rats exposed by inhalation to 5000 ppm n-hexane for 6 weeks showed complete atrophy of the seminiferous tubules. Female mice were exposed to 0, 200, 1000 or 5000 ppm n-hexane for 20 hours/day during gestational days 6-17. There was a significant reduction in gravid

uterine weight and increase in intrauterine death in the 200 ppm group. There was no NOAEC established.

Carcinogenicity:

Benzene (71-43-2): Benzene inhalation at 300 ppm for 6 hours/day, 5 days/week for 16 weeks was carcinogenic in female mice. An increased incidence of lymphoma/leukemia and Zymbal gland and ovarian tumors was observed.

Toluene (108-88-3): Male and female rats were exposed by inhalation to 0, 600, or 1,200 ppm toluene (0, 2,261, 4,522 mg/m³) 6.5 hours/day, 5 days/week for two years. No compound-related clinical signs were noted, and no significant differences in survival were observed between any groups of either sex. There were no substance-related increases in any tumor types. Based on this study, the NOAEC for carcinogenicity was determined to be 1,200 ppm (4,522 mg/m³).

Ethylbenzene (100-41-4): Male and female mice were exposed by inhalation to 0, 75, 250, 750 ppm of ethylbenzene for 6 hours/day, 5 days/week for 104 weeks. In this study, the NOAEC for carcinogenicity was considered to be 250 ppm. At 750 ppm ethylbenzene, male mice exhibited lung tumors (alveolar/bronchiolar neoplasms) and female mice exhibited liver tumors (hepatocellular neoplasms) at incidences greater than controls, but within the historical control incidence range.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:	Fish: Expected to be toxic – 96 hr LL ₅₀ in Pimephales promelas = 8.2 mg/l (data based on similar material) Invertebrates: Expected to be toxic – 48 hr EL50 in Daphnia magna = 4.5 mg/l (data based on similar material) Algae: Expected to be toxic – 72 hr LL ₅₀ in Pseudokirchnerella subcapitata = 3.1 mg/l (data based on similar material)
Persistence and Degradation:	Inherently biodegradable.
Bioaccumulative Potential:	Most of the hydrocarbon components in gasoline have a Log Kow > 3, indicating these constituents have a potential to bioaccumulate; however, biotransformation in upper trophic organisms is expected to limit bioaccumulation.
Mobility in Soil:	The individual components exist primarily as vapor. Expected to have moderate mobility in soil based upon log K _{oc} of 2. Expected to float on water surfaces because it is sparingly soluble in water.
Other Adverse Effects:	Toxic to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

Empty containers or liners may retain some product residues. Do not puncture or incinerate container. This material, if discarded as produced, would not be a federally regulated RCRA “listed” hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic (s); ignitability and toxic characteristics (Benzene). Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.



SECTION 14: TRANSPORT INFORMATION

Proper Shipping Name: Petroleum Gases, Liquefied
UN Number: UN1075
Hazard Class: 2.1
Packing Group: N/A
Marine Pollutant:

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Standard: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

US Federal Regulations:

United States Inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Some components listed

Ingredients: Hexanes (110-54-3)
Benzene (71-43-2)
Toluene (108-88-3)
Ethylbenzene (100-41-4)
O,M &P-Xylene (95-47-6/108-38-3/106-42-3)

Clean Air Act Section 112(r) for Accidental Release Prevention: Some components listed.

Ingredients: Iso-Pentane (78-78-4)
n-Pentane (109-66-0)
Ethane (74-84-0)
Propane (74-98-6)
Iso-Butane (75-28-5)
Butane (106-97-8)
Methane (74-82-8)

Clean Air Act Section 602 Class I Substances: Components not listed.

Clean Air Act Section 602 Class II Substances: Components not listed.

DEA List I Chemicals (Precursor Chemicals): Components not listed.

SARA 302/304: No products were found for composition/information on ingredients.

SARA 304 RQ: Components not listed.

SARA 311/312 Classification: Fire hazard; immediate (acute) health hazard; and delayed (chronic) health hazard.

Composition/Information on Ingredients:

Name	%	Fire Hazard	Sudden Release of Pressure	Reactive	Immediate (acute) Health Hazard	Delayed (chronic) Health Hazard
Iso-Pentane	0-25	Yes	No	No	Yes	No
n- Pentane	0-25	Yes	No	No	Yes	No
Hexanes	0-60	Yes	No	No	Yes	Yes
Toluene	0.1-5	Yes	No	No	Yes	Yes
Benzene	0.1-5	Yes	No	No	Yes	Yes
Ethylbenzene	0.1-5	Yes	No	No	Yes	Yes
O, M & P Xylene	0.1-5	Yes	No	No	Yes	Yes

SARA 313: This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Components	CAS Number	%
Hexanes	110-54-3	0-60
Toluene	108-88-3	0.1-5
Benzene	71-43-2	0.1-5
Ethylbenzene	100-41-4	0.1-5
O, M & P-Xylene	95-47-6/108-38-3/106-42-3	0.1-5

State Regulations:

Massachusetts: Right to Know Substance List

Ingredients: Iso-Pentane (78-78-4)
n-Pentane (109-66-0)
Hexanes (110-54-3)
Benzene (71-43-2)
Toluene (108-88-3)
Ethylbenzene (100-41-4)
O, M & P-Xylene (95-47-6/108-38-3/106-42-3)
Ethane (74-84-0)
Propane (74-98-6)
n-Butane (106-97-8)
Methane (74-82-8)

New Jersey: Right to Know Hazardous Substance List

Ingredients: Iso-Pentane (78-78-4)
n-Pentane (109-66-0)
Hexanes (110-54-3)
Benzene (71-43-2)
Toluene (108-88-3)
Ethylbenzene (100-41-4)
O, M & P-Xylene (95-47-6/108-38-3/106-42-3)
Ethane (74-84-0)
Propane (74-98-6)
Iso- Butane (75-28-5)
n-Butane (106-97-8)
Methane (74-82-8)



Pennsylvania: Right to Know Substance List

- Ingredients:** Iso-Pentane (78-78-4)
 n-Pentane (109-66-0)
 Hexanes (110-54-3)
 Benzene (71-43-2)
 Toluene (108-88-3)
 Ethylbenzene (100-41-4)
 O,M &P-Xylene (95-47-6/108-38-3/106-42-3)
 Ethane (74-84-0)
 Propane (74-98-6)
 Iso-Butane (75-28-5)
 n-Butane (106-97-8)
 Methane (74-82-8)

California Proposition 65: Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer and birth defects or other reproductive effects.

Ingredients	Type of Toxicity
Benzene(71-43-2)	Cancer Developmental , Male
Toluene (108-88-3)	Developmental Toxicant
Ethylbenzene (100-41-4)	Cancer

SECTION 16: OTHER INFORMATION

HMIS Hazard Rating

Health – 2* (Chronic Effects)
Flammability – 4
Physical Hazards – 0
Personal Protection – N/A

ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists	NIOSH	National Institute of Occupational Safety and Health
ANSI	American National Standards Institute	NTP	National Toxicology Program
CAS	Chemical Abstract Service	OSHA	Occupational Safety & Health Administration
CFR	Code of Federal Regulations	PEL	Permissible Exposure Limit
DEA	Drug Enforcement Administration	REL	Recommended Exposure Limit
GHS	Globally Harmonized System of Classification and Labeling of Chemicals	RQ	Reportable Quantity
HMIS	Hazardous Materials Information System	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
IDLH	Immediately Dangerous to Life and Health	SDS	Safety Data Sheet
LC ₅₀	Lethal concentration 50	STEL	Short Term Exposure Limit
LD ₅₀	Lethal Dose 50	TLV	Threshold Limit Value
IARC	International Agency For Research On Cancer	TSCA	Toxic Substances Control Act



NFPA	National Fire Protection Association	TWA	Time Weighted Average
NOAEC	No Observed Adverse Effect Concentration	US	United States

To the best of our knowledge, the information contained herein is accurate. However, neither TreeTop Midstream, LLC, nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.