Section 1: Product and Company Identification

Product Identifier: Natural Gas Liquids Mixture
Other means of identification:
- Y-Grade
- NGL Mix
- Raw Make
- Liquefied Petroleum Gas

SDS Number: H1201
Intended Use: Refinery Feedstock
Uses Advised Against: All others

Texon L.P.
11757 Katy Freeway, Suite 1400
Houston, TX 77079
281-531-8400
www.texonlp.com

Emergency Health and Safety Number:
Chemtrec: 800-424-9300 (24 Hours)

Section 2: Hazards Identification

2.1 Classified Hazards:
- H224 – Flammable liquids – Category 1
- H280 – Gases under pressure- Liquefied gas
- H315 – Skin corrosion/irritation – Category 2
- H340 – May cause genetic defects- Category 1B
- H336 – Specific target organ toxicity (single exposure) – Category 3
- H350 – Carcinogenicity – Category 1B
- H361 – Suspected of damaging fertility or unborn child
- H373 – May cause damage to organs through prolonged or repeated exposure

Other Hazards:
- H331 + H330 - May contain or release poisonous hydrogen sulfide (H2S) gas and may be fatal if inhaled.

This product has not been tested by Texon L.P. for specific health hazards. Therefore, the information provided in this section includes health hazard information based on the product components.

2.2 Label Elements

Hazard Pictograms:
- Flammable liquid
- Explosive gas
- Poisonous gas
- Acute toxicity

Signal Word: DANGER!

Hazard Statements:
- Extremely flammable liquid and vapor. (H224)
- Contains gases under pressure; may explode if heated. (H280)
- May contain or release poisonous hydrogen sulfide gas. (H331)
- May be fatal if swallowed or enters airways. (H304)
- May cause drowsiness or dizziness. (H336)
- May cause genetic defects. (H340)
- May cause cancer. (H350)
Precautionary Statements:

Obtain special instructions before use. (P201)

Prevention:

Do not handle until all safety precautions have been read and understood. (P202)
Keep away from heat, sparks, open flames, hot surfaces, NO SMOKING. (P210)
Keep container tightly closed. (P233)
Ground/bond container and receiving equipment. (P240)
Use explosion-proof electrical, lighting, ventilating equipment. (P241)
Use only non-sparking tools. (P242)
Take precautionary measures against static discharge. (P243)
Do not breathe mist, spray, vapors, dust, fumes, gas. (P260)
Avoid breathing fume, gas, mist, spray, vapors. (P261)
Wash hands thoroughly after handling. (P264)
Use only outdoors in a well-ventilated area. (P271)

Wear eye protection, protective clothing, protective gloves. (P280)
If on skin: wash with plenty of water. Take off and wash all contaminated clothing before reuse. If irritation occurs, seek medical attention. (P302 +P303+P313+P352 +P362)

If inhaled: remove persons to fresh air and keep comfortable for breathing. (P304 + P340)
If exposed or concerned: get medical advice/attention. (P308 +P313)
Call a doctor or POISON CENTER if you feel unwell. (P311 + P312)
Follow specific treatment, see “First Aid Measures” in Section 4. (P321)

In case of fire: use carbon dioxide (CO2), dry extinguishing powder to extinguish. (P370+P378)

Response:

Leaking gas fire: Do not extinguish unless leak can be stopped safely. (P377)
Eliminate all ignition sources if safe to do so. (P381)

Wear protective gloves / protective clothing / eye protection / face protection. (P280)*
Use personal protective equipment as required. (P281)*

Storage:

Store in well-ventilated place. Keep container tightly closed. Keep cool. (P403+P233+P235)
Store locked-up. (P405)

Disposal:

Dispose of contents/container to comply with applicable local, national, and international regulations. (P501)

(*Applicable GHS hazard code)

Section 3: Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CASRN</th>
<th>Concentration¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquefied Petroleum Gases, LPG (C2-C4)</td>
<td>68476-85-7</td>
<td>70-100%</td>
</tr>
<tr>
<td>n-Pentane/ Isopentane</td>
<td>109-66-0 / 78-18-4</td>
<td>5-30%</td>
</tr>
<tr>
<td>Hexanes</td>
<td>110-54-3</td>
<td>0-4%</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>0.05-2%</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>7783-06-4</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Crude oil, natural gas, and natural gas condensate may contain minor amounts of sulfur, nitrogen, oxygen containing organic compounds and trace amounts of metals such as mercury, nickel, and vanadium. Composition can vary depending on source of crude.

Section 4: First Aid Measures

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if eye irritation persist.
**Skin Contact:** Wash frost-bitten areas with plenty of water. Do not remove clothing. Get medical attention immediately.

**Inhalation (Breathing):** Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

**Ingestion (Swallowing):** This material is a gas under normal atmospheric conditions and ingestion is unlikely. Most important symptoms and effects: Narcosis. Behavioral changes. Decreases in motor functions.

**Notes to Physician:** Epinephrine and sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias. At high concentrations hydrogen sulfide may produce pulmonary edema, respiratory depression, and/or respiratory paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. Animal studies suggest that nitrates are a useful antidote, however, documentation of the efficacy of nitrates in humans is lacking. If the diagnosis of hydrogen sulfide poisoning is confirmed and if the patient does not respond rapidly to supportive care, the use of nitrates may be an effective antidote if delivered within the first few minutes of exposure. For adults the dose is 10 mL of a 3% sodium nitrite (NaNO2) solution (0.5 gm NaNO2 in 15 mL water) I.V. over 2-4 minutes. The dosage should be adjusted in children or in the presence of anemia, and methemoglobin levels, arterial blood gases, and electrolytes should be monitored closely.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i) (1) (i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i) (4) (i), provide a urine sample at the end of the shift for measurement of urine phenol.

**Other Comments:** Before attempting rescue, first responders should be alert to the possible presence of hydrogen sulfide, a poisonous gas with the smell of rotten eggs, and should consider the need for respiratory protection (see Section 8). Remove person to fresh air as quickly as possible. Immediately begin artificial respiration if breathing has ceased. Consider whether oxygen administration is needed. Obtain medical advice for further treatment.

---

**Section 5: Fire-Fighting Measures**

**NFPA 704 Hazard Class**

Health: 2  Flammability: 4  Instability: 0

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or surfaces. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Specific hazards arising from the material:

**Unusual Fire & Explosion Hazards:** Extremely flammable. Contents under pressure. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazards indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire. Hazardous combustion/decomposition products,
including hydrogen sulfide, may be released by this material when exposed to heat or fire. Use caution and wear protective clothing, including respiratory protection.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

**Special protective actions for firefighters:** For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done safely. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for flammable properties, including Flash Point and Upper and Lower Explosive Limits.

### Section 6: Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Extremely flammable. Spillage of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Beware of accumulation of gas in low areas or contained areas, where explosive concentrations may occur. Prevent from entering drains or any place where accumulation may occur. Ventilate area and allowed to evaporate. Stay upwind and away from spill/release, isolate immediate hazard area and keep unauthorized personnel out. Avoid direct contact with material. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. If the presence of dangerous amounts of hydrogen sulfide around the spilled product is suspected, additional actions may be warranted, including access restrictions and use of protective equipment. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards, handling and storage.

**Environmental Precautions:** Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water may require notification of the National Response Center (phone number: 800-424-8802).

**Methods and material for containment and cleaning up:** Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms, or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

### Section 7: Handling and Storage

**Precautions for safe handling:** Keep away from ignition sources such as heat/sparks/open flames – No smoking. Take precautionary measures against static discharge. May contain or release dangerous levels of hydrogen sulfide. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing vapors or mists. Use only outdoors or in well-ventilated area. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate
personal protective equipment (see Section 8). Extremely flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create and explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29 CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

**Static Accumulation Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that special slow load procedures for “switch loading” are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106, ‘Flammable and Combustible Liquids’, National Fire Protection Association (NFPA) 77, ‘Recommended Practice on Static Electricity’, and the American Petroleum Institute (API) Recommended Practice 2003, ‘Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents’.

**Conditions for safe storage:** This material may contain or release poisonous hydrogen sulfide gas. In a tank, barge, or other closed container, the vapor space above this material may accumulate hazardous concentrations of hydrogen sulfide. Check atmosphere for oxygen content, hydrogen sulfide, and flammability prior to entry. Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area “No Smoking or Open Flame.” Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

“Empty” containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. “Empty” drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations. Avoid exposing any part of compressed-gas cylinder to temperatures above 125°F (51.6°C). Gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

### Section 8: Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TWA (ppm)</th>
<th>OSHA PEL</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquefied Petroleum Gases</td>
<td>1000 ppm</td>
<td>1000 ppm</td>
<td>IDLH: 2100 ppm</td>
</tr>
<tr>
<td>Pentanes</td>
<td>1000 ppm</td>
<td>1000 ppm</td>
<td>IDLH: 1500 ppm</td>
</tr>
<tr>
<td>Hexanes</td>
<td>50 ppm TWA</td>
<td>500 ppm TWA</td>
<td>IDLH: 1100 ppm 50 ppm TWA</td>
</tr>
<tr>
<td>Benzene</td>
<td>.5 ppm TWA</td>
<td>1 ppm TWA STEL: 5 ppm (29 CFR 1910.1028) PEL Ceiling: 25ppm</td>
<td>IDLH: 500 ppm</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 ppm TWA STEL: 5 ppm</td>
<td>20 ppm 50 ppm (10 minute max peak)</td>
<td>IDLH: 100 ppm 5 ppm 8 hr TWA 2.5 ppm 12 hr TWA</td>
</tr>
</tbody>
</table>
Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Eye/face Protection:** The use of eye protection (such as splash goggles) that meets or exceeds ANSI Z87.1 is recommended when there is potential liquid contact to the eye. Depending on conditions of use, a face shield may be necessary.

**Skin/Hand Protection:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits.

**Respiratory Protection:** A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH).

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

If benzene concentrations equal or exceed applicable exposure limits, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29 CFR 1910.1028 - Benzene).

**Suggestion provided this Section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

### Section 9: Physical and Chemical Properties

Data represent typical values and are not intended to be specifications. N/A = Not Applicable; N/D = Not Determined

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Colorless</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>-105°F to -212.5°F (-58°C to -135°C)</td>
</tr>
<tr>
<td><strong>Physical Form</strong></td>
<td>Liquefied Gas, Compressed</td>
</tr>
<tr>
<td><strong>Test Method</strong></td>
<td>Values provided are typical of similar products</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Petroleum, Gasoline-like; /Rotten Egg/Sulfurous</td>
</tr>
<tr>
<td><strong>Initial Boiling Point/Range</strong></td>
<td>&gt; 44.39°F ( &gt; -42.44°C)</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Partition Coefficient</strong></td>
<td>(n-octanol/water) (Kow): N/D</td>
</tr>
<tr>
<td><strong>Vapor Density</strong> (air=1):</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Melting/Freezing Point</strong></td>
<td>-305° to -295°F (-187° to -182°C)</td>
</tr>
<tr>
<td><strong>Upper Explosive Limits</strong></td>
<td>13.0</td>
</tr>
<tr>
<td><strong>Auto Ignition Temperature</strong></td>
<td>800°F (427 °C)</td>
</tr>
<tr>
<td><strong>Lower Explosive Limits</strong></td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong> (nBuAc=1)</td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong> (water=1)</td>
<td>0.37 to 0.74 @ 60°F (15.6°C)</td>
</tr>
<tr>
<td><strong>Reid Vapor Pressure</strong></td>
<td>150-200 psia @ 100°F (37.8°C)</td>
</tr>
<tr>
<td><strong>Bulk Density</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Percent Volatile</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Extremely Flammable</td>
</tr>
<tr>
<td><strong>Solubility in Water</strong></td>
<td>N/D</td>
</tr>
</tbody>
</table>

### Section 10: Stability and Reactivity

**Chemical stability:** Stable under normal ambient and anticipated conditions of use.

**Conditions to avoid:** Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

**Incompatible materials:** Avoid contact with strong oxidizing agents and strong reducing agents.
Hazardous decomposition products: Not anticipated under normal conditions of use.

Hazardous Polymerization: Not known to occur.

Section 11: Toxicological Information

Information on Toxicological Effects of Substance/Mixture:

<table>
<thead>
<tr>
<th>Acute Toxicity</th>
<th>Hazard</th>
<th>Additional Information</th>
<th>LC50/LD50 Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Expected to have a low degree of toxicity by inhalation. If hydrogen sulfide gas is present – may be fatal if inhaled</td>
<td>May contain or release poisonous hydrogen sulfide gas - see Other Comments below</td>
<td>Hydrogen Sulfide LC50: .99 mg/l with exposure time: 1 hour Pentane LC50=3000 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>Absorption through skin, eye contact</td>
<td>Benzenes are known carcinogens</td>
<td>Benzene LD50 dermal=8260 mg/kg Hexane LD50=3000mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td>Ingestion is not anticipated</td>
<td></td>
<td>Benzene LD50 = 810 mg/kg</td>
</tr>
</tbody>
</table>

Aspiration Hazard: May be fatal if swallowed and enters airways.

Skin Corrosion/Irritation: Causes skin irritation and frostbite burn hazards.

Serious Eye Damage/Irritation: Causes eye irritation.

Symptoms of Overexposure: Effects of overexposure can include slight irritation of the respiratory tract, nausea, vomiting, and signs of nervous system depression (e.g. headache, drowsiness, and dizziness, loss of coordination, disorientation, and fatigue). Continued exposure to high concentrations can result in vomiting, cardiac irregularities, and sudden loss of consciousness.

Skin Sensitization: Skin contact is not anticipated.

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness or dizziness.

Specific Target Organ Toxicity (Repeated Exposure): eyes, skin, respiratory system, blood, central nervous system, liver, kidneys, and bone marrow.

Carcinogenicity: May cause cancer based on component information. Benzene is a known human carcinogen in NTP studies.

Germ Cell Mutagenicity: May cause inheritable genetic effect based on component information.

Reproductive Toxicity: May contain certain components that can cause reproductive toxicity.

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat, and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

Toxicological Effects of Components

Natural gas (petroleum), raw liq. mix

Carcinogenicity: Two year inhalation studies of vaporized unleaded gasoline produced an increased incidence of kidney tumors in male rats and liver tumors in female mice. Repeated skin application of various petroleum napthas in mice for two years resulted in an increased incidence of skin tumors but only in the presence of severe skin irritation. Follow-up mechanistic studies suggest that the occurrence of these tumors may be the consequence of promotional processed and not relevant to human risk assessment. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma,
or kidney cancer from gasoline exposure. Unleaded gasoline has been identified as a possible carcinogen by the International Agency for Research on Cancer.

**Target Organs:** Two year inhalation studies of wholly vaporized unleaded gasoline, and 90 day studies of various petroleum naphas, did not produce significant target organ toxicity in laboratory animals. Nephropathy in male rats, characterized by the accumulation of alpha-2-u-globulin in epithelial cells of the proximal tubules was observed, however follow-up studies suggest that these changes are unique to the male rat.

**Reproductive Toxicity:** No adverse reproductive or developmental effects were observed in rats exposed to natural gas.

**n-Hexane**

**Target Organs:** Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesia of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs, and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

**Reproductive Toxicity:** Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

**Hydrogen Sulfide**

**Target Organs:** May be fatal if inhaled.

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**Section 12: Ecological Information**

**Toxicity:** Acute aquatic toxicity studies on samples of gasoline and naptha streams show acute toxicity values greater than 1 mg/L and mostly in the range 1-100 mg/L. These tests were carried out on water accommodated fractions, in closed systems to prevent evaporative loss. Results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon composition. These substances should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment.

**Persistence and Degradability:** The hydrocarbons in this material are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganisms. Non-persistent.

**Bioaccumulative Potential:** Log Kow values measured for the hydrocarbon components of this material range from 3 to greater than 6 and therefore are regarded as having the potential to bioaccumulate. In practice, metabolic processes or physical properties may prevent this effect or limit bioavailability.

**Mobility in Soil:** On release to water, hydrocarbons will float on the surface and since they are sparingly soluble, the only significant loss is volatilization to air. In air, these hydrocarbons are photodegraded by reaction with hydroxyl radicals with half-lives varying from 6.5 days for benzene to 0.5 days for n-dodecane

**Other Adverse Effects:** None anticipated.

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**Section 13: Disposal Considerations**

Dispose of container in and unused contents in accordance with all applicable federal, state, and local regulations. Empty containers may contain product residues. Do not puncture or incinerate even when empty.

**EPA Waste Number(s):**
- D001 (Ignitability characteristic)
- D018 (Toxicity characteristic)

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**Section 14: Transport Information**

**U.S. Department of Transportation (DOT)**

**Shipping description:** UN1075, Petroleum Gas, Liquefied, 2.1

**Non-Bulk Package Marking:** Petroleum Gas, Liquefied, UN1075

**Non-Bulk Package Labeling:** Flammable gas

**Bulk Package/Placard Marking:** Flammable gas/1075

**Packaging – References:** 49 CFR 173.306 (Exceptions); 173.304 (Non-Bulk); 173.314 & .315 (Bulk)

**Hazardous Substance:** See Section 15 for Regulatory Information
**International Maritime Dangerous Goods (IMDG)**

**Shipping Description:** UN1075, Petroleum Gas, Liquefied, 2.1  
**Non-Bulk Package Marking:** Petroleum Gas, Liquefied, UN1075  
**Labels:** Flammable gas  
**Placards/Marking (Bulk):** Flammable gas/1075  
**Packaging – Non-Bulk:** Not available.  
**EMS:** F-D, S-U

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
Transport in bulk according to Annex II of MARPOL 73/78 and the IBS Code: Not applicable

**International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)**

**UN/ID #:** UN1075  
**Proper Shipping Name:** Petroleum Gas, Liquefied  
**Hazard Class/Division:** 2.1  
**Subsidiary risk:** None  
**Non-Bulk Package Marking:** Petroleum Gas, Liquefied, UN1075  
**Labels:** Flammable gas, Cargo Aircraft Only  
**ERG Code:** 10L

<table>
<thead>
<tr>
<th>LTD. QTY</th>
<th>Passenger Aircraft</th>
<th>Cargo Aircraft Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package Instruction #:</td>
<td>Forbidden</td>
<td>Forbidden</td>
</tr>
<tr>
<td>Max. Net. Qty. Per Package:</td>
<td>Forbidden</td>
<td>Forbidden</td>
</tr>
</tbody>
</table>

### Section 15: Regulatory Information

**OSHA HAZARD COMMUNICATION STANDARD**
This material has been evaluated and determined to be a “Hazardous Chemical” as defined in OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**CERCLA – Section 302 Extremely Hazardous Substances and TPQs (in pounds)**
This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:

<table>
<thead>
<tr>
<th>Components</th>
<th>TPQ</th>
<th>EPCRA RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Sulfide</td>
<td>500 lb</td>
<td>100 lb</td>
</tr>
</tbody>
</table>

**CERCLA/SARA – Section 311/312 (Title III Hazard Categories)**

- **Acute Health:** Yes  
- **Chronic Health:** Yes  
- **Fire Hazard:** Yes  
- **Pressure Hazard:** Yes  
- **Reactive Hazard:** No

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

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3-butadiene</td>
<td>106-99-0</td>
</tr>
<tr>
<td>Butane</td>
<td>106-97-8</td>
</tr>
<tr>
<td>Ethane</td>
<td>74-84-0</td>
</tr>
<tr>
<td>Ethylene</td>
<td>74-85-1</td>
</tr>
<tr>
<td>Isobutane</td>
<td>75-28-5</td>
</tr>
<tr>
<td>Methane</td>
<td>74-82-8</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
</tr>
</tbody>
</table>
**EPA (CERCLA) Reportable Quantity (in pounds)**
EPA’s Petroleum Exclusion applies to this material – (CERCLA 101(14)).

**California Proposition 65**
This material contains 1,3-butadiene (CAS 106-99-0), a substance known to the State of California to cause cancer, birth defects, or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

**National Chemical Inventories**
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA. All components are either on the DSL, or are exempt from DSL listing requirements.

### Section 16: Other Information

<table>
<thead>
<tr>
<th>Date of Issue:</th>
<th>Previous Issue Date:</th>
<th>SDS Number:</th>
<th>Status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1, 2015</td>
<td>December 2010</td>
<td>H1201</td>
<td>FINAL</td>
</tr>
</tbody>
</table>

**Revised Sections or Basis for Revision: GHS Updates**
- Identification (Section 1)
- Hazards Identification (Section 2)
- Composition/Information on Ingredients (Section 3)
- First Aid Measures (Section 4)
- Fire-Fighting Measures (Section 5)
- Accidental Release Measures (Section 6)
- Handling and Storage (Section 7)
- Exposure Controls/Personal Protection (Section 8)
- Physical and Chemical Properties (Section 9)
- Stability and Reactivity (Section 10)
- Toxicological Information (Section 11)
- Ecological Information (Section 12)
- Disposal Considerations (Section 13)
- Transport Information (Section 14)
- Regulatory Information (Section 15)
- Other Information (Section 16)

**Guide to Abbreviations:**
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

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