SAFETY DATA SHEET
Gasoline Blend Stocks

Section 1. Identification

Product name: Gasoline Blend Stocks
Synonyms: Alkylate, Cat Gas, Cat Gasoline, CRU1 Reformate, CRU2 Reformate, Crude LSR Gasoline, Deiso bottoms - Alkylate, Deisoheaxanizer Bottoms, FCC Gasoline, FCCU Cat Gasoline, Heavy FCC Gasoline, Heavy Platformate, Heavy Straight Run (HSR), Isomerate, Isostrripper bottoms - Alkylate, Jet Base, Light Cat Naphtha (LCN), Light FCC Gasoline, Light Plat. (BZSU Splitter OH), Light Straight Run, Low Sulfur Cat Gas, LSR, Naphtha Splitter Bottoms, Penate gasoline, Platformate, Raffinate, Reformate, Reformate gasoline, Scanfinate, Scanfiner Rundown, Sweet Naphtha, Total Plat

Relevant identified uses of the substance or mixture and uses advised against
Product use: Intermediate.
Manufacturer: HollyFrontier Refining & Marketing LLC
2828 North Harwood
Suite 1300
Dallas, Texas 75201
USA
Customer Service: (888) 286-8836

Emergency telephone number: CHEMTREC® (800) 424-9300
CCN 201319

Section 2. Hazards identification

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture: FLAMMABLE LIQUIDS - Category 1
SKIN CORROSION/IRRITATION - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION (Fertility) - Category 2
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ASPIRATION HAZARD - Category 1

GHS label elements
Hazard pictograms: 

Signal word: Danger
Hazard statements: Extremely flammable liquid and vapor.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May be fatal if swallowed and enters airways.
May cause drowsiness and dizziness.

Precautionary statements:

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**Prevention**: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

**Response**: IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention.

**Storage**: Store in a well-ventilated place. Keep cool.

**Disposal**: Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements**: Avoid contact with skin and clothing. Wash thoroughly after handling.

**Hazards not otherwise classified**: Prolonged or repeated contact may dry skin and cause irritation. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

### Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture.</th>
</tr>
</thead>
</table>

**CAS number/other identifiers**

<table>
<thead>
<tr>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>0 - 80</td>
<td>86290-81-5</td>
</tr>
<tr>
<td>pentane</td>
<td>0 - 30</td>
<td>109-66-0</td>
</tr>
<tr>
<td>n-hexane</td>
<td>0 - 25</td>
<td>110-54-3</td>
</tr>
<tr>
<td>toluene</td>
<td>0 - 22</td>
<td>108-88-3</td>
</tr>
<tr>
<td>benzene</td>
<td>0 - 10</td>
<td>71-43-2</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>0 - 7</td>
<td>100-41-4</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>0 - 5</td>
<td>95-63-6</td>
</tr>
<tr>
<td>naphthalene</td>
<td>0 - 1</td>
<td>91-20-3</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>&lt;0.0001</td>
<td>7783-06-4</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention. Continue to rinse for at least 15 minutes.

**Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Date of issue/Date of revision**: 7/25/2014. **Date of previous issue**: No previous validation. **Version**: 1
**Gasoline Blend Stocks**

**HollyFrontier Refining & Marketing LLC**

**Skin contact**
- Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**
- Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Get medical attention.**

**Inhalation**
- Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

**Skin contact**
- Causes skin irritation. Defatting to the skin.

**Ingestion**
- Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

**Eye contact**
- May cause mild eye irritation.

**Inhalation**
- Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

**Skin contact**
- Causes skin irritation. Defatting to the skin.

**Ingestion**
- Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

**Over-exposure signs/symptoms**

**Eye contact**
- pain or irritation; watering; redness

**Inhalation**
- respiratory tract irritation; coughing; nausea or vomiting; headache; drowsiness/fatigue; dizziness/vertigo; unconsciousness

**Skin contact**
- irritation; redness; dryness; cracking

**Ingestion**
- nausea or vomiting

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**
- Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents.

**Specific treatments**
- No specific treatment.

**Protection of medical responders**
- No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**See toxicological information (Section 11)**

**Section 5. Fire-fighting measures**

**Extinguishing media**

**Suitable extinguishing media**
- Use dry chemical, CO₂, water spray (fog) or foam.

**Unsuitable extinguishing media**
- Do not use water jet.

**Specific hazards arising from the chemical**
- Extremely flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

**Hazardous thermal decomposition products**
- Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up:

Small spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, waterways, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Precautions for safe handling:

Protective measures: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. High pressure skin injections are serious medical emergencies. Injury will not appear serious at first. Within a few hours, tissue will become swollen, discolored and extremely painful. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
**Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>-</td>
</tr>
</tbody>
</table>
                 TWA: 600 ppm 8 hours.  
                 TWA: 1800 mg/m³ 8 hours.  
                 STEL: 750 ppm 15 minutes.  
                 STEL: 2250 mg/m³ 15 minutes.  
                 OSHA PEL (United States, 2/2013).  
                 TWA: 1000 ppm 8 hours.  
                 TWA: 2960 mg/m³ 8 hours.  
                 TWA: 50 ppm 8 hours.  
                 TWA: 180 mg/m³ 8 hours.  
                 OSHA PEL (United States, 2/2013).  
                 TWA: 500 ppm 8 hours.  
                 TWA: 1800 mg/m³ 8 hours.  
                 TWA: 100 ppm 8 hours.  
                 TWA: 375 mg/m³ 8 hours.  
                 STEL: 150 ppm 15 minutes.  
                 STEL: 560 mg/m³ 15 minutes.  
                 OSHA PEL ZZ (United States, 2/2013).  
                 TWA: 200 ppm 8 hours.  
                 CEIL: 300 ppm  
                 AMP: 500 ppm 10 minutes.  
                 TWA: 1 ppm 8 hours.  
                 STEL: 5 ppm 15 minutes.  
                 OSHA PEL ZZ (United States, 2/2013).  
                 TWA: 10 ppm 8 hours.  
                 CEIL: 25 ppm  
                 AMP: 50 ppm 10 minutes.  
                 TWA: 100 ppm 8 hours.  
                 TWA: 435 mg/m³ 8 hours.  
                 STEL: 125 ppm 15 minutes.  
                 STEL: 545 mg/m³ 15 minutes.  
| 1,2,4-trimethylbenzene | OSHA PEL 1989 (United States, 3/1989).  
                         TWA: 100 ppm 8 hours.  
                         TWA: 435 mg/m³ 8 hours.  
                 TWA: 15 ppm 15 minutes.  
                 STEL: 75 mg/m³ 15 minutes.  

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7/25/2014

### Date of previous issue  
No previous validation

### Version  
1
### Gasoline Blend Stocks

<table>
<thead>
<tr>
<th>Substance</th>
<th>TWA: 10 ppm 8 hours.</th>
<th>TWA: 52 mg/m³ 8 hours.</th>
<th>STEL: 15 ppm 15 minutes.</th>
<th>STEL: 75 mg/m³ 15 minutes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide</td>
<td>TWA: 50 mg/m³ 8 hours.</td>
<td>ACGIH TLV (United States, 6/2013). TWA: 1 ppm 8 hours.</td>
<td>TWA: 14 mg/m³ 8 hours.</td>
<td>STEL: 5 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013).</td>
<td>TWA: 10 ppm 8 hours.</td>
<td>STEL: 21 mg/m³ 15 minutes.</td>
<td>NIOSH REL (United States, 10/2013).</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL 1989 (United States, 3/1989). TWA: 10 ppm 8 hours.</td>
<td>CEIL: 20 ppm AMP: 50 ppm 10 minutes.</td>
<td>CEIL: 10 ppm 10 minutes.</td>
<td>CEIL: 15 mg/m³ 10 minutes.</td>
</tr>
</tbody>
</table>

### Appropriate engineering controls
- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. May release hydrogen sulfide a poisonous gas that can accumulate in confined spaces.

### Environmental exposure controls
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### 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.
- Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

#### Skin protection

##### Hand protection
- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

##### Body protection
- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

##### Other skin protection
- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Respiratory protection
- Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Section 9. Physical and chemical properties

**Appearance**
- **Physical state**: Liquid.
- **Color**: Clear to Amber.
- **Odor**: Gasoline
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: -77 to -33°C (-107 to -27°F)
- **Boiling point**: -5 to 47°C (23 to 116°F)
- **Flash point**: <38°C (<100°F)
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: 8.3 to 128.2 kPa (62.053 to 961.82 mm Hg), 1.2 - 18.6 psi
- **Vapor density**: Not available.
- **Specific gravity**: 0.66 to 0.87
- **Solubility**: Insoluble in the following materials: cold water and hot water.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: Not available.
- **Viscosity**: Kinematic (40°C (104°F)): 0.0016 to 0.012 cm²/s (0.16 to 1.2 cSt)
- **Molecular weight**: Not applicable.

Section 10. Stability and reactivity

**Reactivity**: No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**: The product is stable.

**Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid**: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatible materials**: Reactive or incompatible with the following materials: oxidizing materials

**Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>&gt;5.2 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Based on CONCAWE assessment of low boiling point naphthas (Gasolines).

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**Date of previous issue**: No previous validation

**Version**: 1
Irritation/Corrosion
Not available.

Conclusion/Summary

Skin: Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Slight to moderate/severe irritating to skin.

Eyes: Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Non-irritating to the eyes.

Sensitization

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Route of exposure</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>skin</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Not sensitizing.

Respiratory: No data available.

Carcinogenicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>toluene</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>Known to be a human carcinogen.</td>
</tr>
<tr>
<td>benzene</td>
<td>+</td>
<td>1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td>Reasonably anticipated to be a human carcinogen.</td>
</tr>
<tr>
<td>naphthalene</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects

Conclusion/Summary: Based on CONCAWE assessment of low boiling point naphthas (Gasolines). Inhalation: No systemic toxicity. Dermal: No systemic toxicity.

General: Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Carcinogenicity: May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity: May cause genetic defects.
Teratogenicity: Suspected of damaging the unborn child.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>4092.6 mg/kg</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>Acute EC50 1 to 10 mg/l</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute IC50 1 to 10 mg/l</td>
<td>Algae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1 to 10 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Based on CONCAWE assessment of low boiling point naphthas (Gasolines).

Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>toluene</td>
<td>301C Ready Biodegradability - Modified MITI Test (I)</td>
<td>100 % - 14 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>benzene</td>
<td>301C Ready Biodegradability - Modified MITI Test (I)</td>
<td>100 % - 14 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Based on CONCAWE assessment of low boiling point naphthas (Gasolines).

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>-</td>
<td>-</td>
<td>Inherent</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>&gt;4</td>
<td>10 to 2500</td>
<td>high</td>
</tr>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (K_{OC}): Not available.

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a...
safe way. Care should be taken when handling emptied containers that have not been
 cleaned or rinsed out. Empty containers or liners may retain some product residues.
Vapor from product residues may create a highly flammable or explosive atmosphere
inside the container. Do not cut, weld or grind used containers unless they have been
cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact
with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Status</th>
<th>Reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene; Benzene, methyl-</td>
<td>108-88-3</td>
<td>Listed</td>
<td>U220</td>
</tr>
<tr>
<td>Benzene (I,T)</td>
<td>71-43-2</td>
<td>Listed</td>
<td>U019</td>
</tr>
</tbody>
</table>

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons, liquid, n.o.s. RQ (benzene, toluene)</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
<td>UN3295</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
<th>3</th>
<th>3</th>
<th>3</th>
<th>3</th>
<th>3</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Packing group</th>
<th>I</th>
<th>I</th>
<th>I</th>
<th>I</th>
<th>I</th>
<th>I</th>
</tr>
</thead>
</table>

|-----------------------|-----|-----|-----|-----|------|-----|

<table>
<thead>
<tr>
<th>Additional information</th>
<th>Reportable quantity</th>
<th>Explosive Limit and Limited Quantity Index</th>
<th>-</th>
<th>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</th>
<th>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</th>
<th>The environmentally hazardous substance mark may appear if required by other transportation regulations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 lbs / 90.8 kg [31.355 gal / 118.69 L]</td>
<td>0.5</td>
<td>Passenger Carrying Ship Index</td>
<td>Forbidden</td>
<td>Emergency schedules (EmS)</td>
<td>F-E, S-D</td>
<td>Passenger and Cargo Aircraft</td>
</tr>
<tr>
<td>Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</td>
<td></td>
<td>Passenger Carrying Road or Rail Index</td>
<td>1</td>
<td>Hazard identification number</td>
<td>33</td>
<td>Quantity limitation: 1 L Packaging instructions: 351</td>
</tr>
<tr>
<td>Limited quantity</td>
<td>Yes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cargo Aircraft OnlyQuantity limitation: 30 L Packaging instructions: 361</td>
</tr>
<tr>
<td>Limited quantity</td>
<td>Yes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tunnel code (D/E)
<table>
<thead>
<tr>
<th>Instruction</th>
<th>Limited Quantities - Passenger Aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger aircraft</td>
<td>Quantity limitation: Forbidden</td>
</tr>
<tr>
<td>Cargo aircraft</td>
<td>Quantity limitation: Forbidden</td>
</tr>
</tbody>
</table>

**Special provisions**

- 144, T11, TP1, TP8, TP28
- A3, A224

**Special precautions for user**: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

### U.S. Federal regulations

- **TSCA 8(a) PAIR**: pentane; naphthalene
- **United States inventory (TSCA 8b)**: All components are listed or exempted.
- **Clean Water Act (CWA) 307**: toluene; benzene; ethylbenzene; naphthalene
- **Clean Water Act (CWA) 311**: toluene; benzene; ethylbenzene; naphthalene; hydrogen sulfide
- **Clean Air Act (CAA) 112 regulated flammable substances**: pentane

### Clean Air Act Section 112

- **(b) Hazardous Air Pollutants (HAPs)**: Listed
- **DEA List II Chemicals (Essential Chemicals)**: Listed

### SARA 302/304

#### Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide</td>
<td>&lt;0.0001</td>
<td>Yes.</td>
<td>500</td>
<td>-</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

**SARA 304 RQ**

- 111111111.1 lbs / 50444444.4 kg [17419624.1 gal / 65940450.3 L]

**SARA 311/312**

- **Classification**: Fire hazard
  - Immediate (acute) health hazard
  - Delayed (chronic) health hazard

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**Date of previous issue**: No previous validation.
**Version**: 1

**11/13**
Gasoline Blend Stocks

HollyFrontier Refining & Marketing LLC

<table>
<thead>
<tr>
<th>Component</th>
<th>Hydrogen Sulfide</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No Significant Risk Level</th>
<th>Maximum Acceptable Dosage Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen sulfide</td>
<td>&lt;0.0001</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**SARA 313**

<table>
<thead>
<tr>
<th>Form R - Reporting requirements</th>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>0 - 25</td>
<td></td>
</tr>
<tr>
<td>toluene</td>
<td>108-88-3</td>
<td>0 - 22</td>
<td></td>
</tr>
<tr>
<td>benzene</td>
<td>71-43-2</td>
<td>0 - 10</td>
<td></td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>100-41-4</td>
<td>0 - 7</td>
<td></td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>95-63-6</td>
<td>0 - 5</td>
<td></td>
</tr>
<tr>
<td>naphthalene</td>
<td>91-20-3</td>
<td>0 - 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplier notification</th>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>0 - 25</td>
<td></td>
</tr>
<tr>
<td>toluene</td>
<td>108-88-3</td>
<td>0 - 22</td>
<td></td>
</tr>
<tr>
<td>benzene</td>
<td>71-43-2</td>
<td>0 - 10</td>
<td></td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>100-41-4</td>
<td>0 - 7</td>
<td></td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>95-63-6</td>
<td>0 - 5</td>
<td></td>
</tr>
<tr>
<td>naphthalene</td>
<td>91-20-3</td>
<td>0 - 1</td>
<td></td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**State regulations**

**Massachusetts**: The following components are listed: PENTANE; TOLUENE; HEXANE; BENZENE; ETHYL BENZENE; PSEUDOCUMENE

**New York**: The following components are listed: Toluene; Hexane; Benzene; Ethylbenzene; Naphthalene

**New Jersey**: The following components are listed: PENTANE; TOLUENE; BENZENE, METHYL-; n-HEXANE; HEXANE; BENZENE; ETHYL BENZENE; BENZENE, ETHYL-; PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; NAPHTHALENE; MOTH FLAKES

**Pennsylvania**: The following components are listed: GASOLINE; PENTANE; BENZENE, METHYL-; HEXANE; BENZENE; BENZENE, ETHYL-; PSEUDOCUMENE; NAPHTHALENE

**California Prop. 65**

**WARNING**: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>toluene</td>
<td>No.</td>
<td>Yes</td>
<td>No</td>
<td>7000 µg/day (ingestion)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13000 µg/day (ingestion)</td>
</tr>
<tr>
<td>benzene</td>
<td>Yes.</td>
<td>Yes</td>
<td>6.4 µg/day (ingestion)</td>
<td>24 µg/day (ingestion)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13 µg/day (ingestion)</td>
<td>49 µg/day (ingestion)</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>Yes.</td>
<td>No</td>
<td>41 µg/day (ingestion)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>54 µg/day (ingestion)</td>
<td></td>
</tr>
</tbody>
</table>

**Canada inventory**: All components are listed or exempted.

**International regulations**

**International lists**

**Australia inventory (AICS)**: All components are listed or exempted.

**China inventory (IECSC)**: Not determined.

**Japan inventory**: Not determined.

**Korea inventory**: All components are listed or exempted.

**Malaysia Inventory (EHS Register)**: Not determined.

**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.

**Philippines inventory (PICCS)**: All components are listed or exempted.

**Taiwan inventory (CSNN)**: Not determined.

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**Date of previous issue**: No previous validation

**Version**: 1
Section 16. Other information

National Fire Protection Association (U.S.A.)

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Date of issue/Date of revision : 7/25/2014.
Date of previous issue : No previous validation.
Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
                        BCF = Bioconcentration Factor
                        GHS = Globally Harmonized System of Classification and Labelling of Chemicals
                        IATA = International Air Transport Association
                        IMDG = International Maritime Dangerous Goods
                        LogPow = logarithm of the octanol/water partition coefficient
                        UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named manufacturer, 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.