SAFETY DATA SHEET

UTG 96 (unleaded test gasoline)
Version 5.0
Revision Date 2016-06-16

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information
Product Name : UTG 96 (unleaded test gasoline)
Material : 1021671, 1032452, 1021667, 1021669, 1021670, 1021668

Use : Reference Fuel

Company : Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)

Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Emergency Overview

Danger
Form: Liquid Physical state: Liquid Color: Yellow, pale Odor: Mild
OSHA Hazards : Flammable Liquid, Toxic by inhalation., Harmful by ingestion., Moderate skin irritant, Moderate eye irritant, Carcinogen, Reproductive hazard, Aspiration hazard, Mutagen, Target Organ Effects

Classification
SDS Number:100000013939

1/26
UTG 96 (unleaded test gasoline)

SAFETY DATA SHEET

Version 5.0

Revision Date 2016-06-16

SDS Number:100000013939

: Flammable liquids, Category 1
Acute toxicity, Category 4, Inhalation
Skin irritation, Category 2
Eye irritation, Category 2A
Germ cell mutagenicity, Category 1B
Carcinogenicity, Category 1A
Reproductive toxicity, Category 2
Specific target organ systemic toxicity - single exposure,
Category 3, Respiratory system, Central nervous system
Specific target organ systemic toxicity - repeated exposure,
Category 1, Eyes, Blood
Specific target organ systemic toxicity - repeated exposure,
Category 2, Auditory organs, Nervous system
Specific target organ systemic toxicity - repeated exposure,
Category 2, Inhalation, Auditory organs
Aspiration hazard, Category 1

Labeling

Symbol(s): 

Signal Word: Danger

Hazard Statements: 
H224: Extremely flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H340: May cause genetic defects.
H350: May cause cancer.
H361: Suspected of damaging fertility or the unborn child.
H372: Causes damage to organs (Eyes, Blood, Auditory organs, Nervous system) through prolonged or repeated exposure.
H373: May cause damage to organs (Auditory organs) through prolonged or repeated exposure if inhaled.

Precautionary Statements: 

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 explosion-proof electrical/ventilating/ lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapor/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.  
Response:  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P311 Do NOT induce vomiting.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  

Storage:  
P403 + P233 Store in a 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 an approved waste disposal plant.  

Carcinogenicity:  

SECTION 3: Composition/information on ingredients  

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha, Petroleum, Heavy Catalytic Cracked</td>
<td>64741-54-4</td>
<td>60 - 80</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Naphtha (petroleum), light alkylate</td>
<td>64741-66-8</td>
<td>30 - 60</td>
</tr>
<tr>
<td>3,3-Dimethylpentane</td>
<td>562-49-2</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Isopentane</td>
<td>78-78-4</td>
<td>20 - 50</td>
</tr>
<tr>
<td>Naphtha (petroleum), light catalytic reformed</td>
<td>64741-63-5</td>
<td>10 - 30</td>
</tr>
<tr>
<td>2,2,4-Trimethylpentane (Isooctane)</td>
<td>540-84-1</td>
<td>5 - 30</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>5 - 20</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>5 - 20</td>
</tr>
<tr>
<td>n-Butane</td>
<td>106-97-8</td>
<td>5 - 20</td>
</tr>
<tr>
<td>Kerosene C9-C16</td>
<td>8008-20-6</td>
<td>5 - 20</td>
</tr>
<tr>
<td>Naphtha (petroleum), heavy straight-run</td>
<td>64741-41-9</td>
<td>5 - 20</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

UTG 96 (unleaded test gasoline)

Version 5.0

Revision Date 2016-06-16

<table>
<thead>
<tr>
<th>Naphthalene</th>
<th>91-20-3</th>
<th>5 - 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>64742-48-9</td>
<td>1 - 10</td>
</tr>
<tr>
<td>2-Methylpentane</td>
<td>107-83-5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2-Methylhexane</td>
<td>591-76-4</td>
<td>1 - 5</td>
</tr>
<tr>
<td>3-Methylhexane</td>
<td>589-34-4</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>1 - 5</td>
</tr>
<tr>
<td>3-Methylpentane</td>
<td>96-14-0</td>
<td>1 - 5</td>
</tr>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>1 - 5</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2-methyl-2-butene</td>
<td>513-35-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>1 - 5</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>109-66-0</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2,3-Dimethylpentane</td>
<td>565-59-3</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2,4-Dimethylpentane</td>
<td>108-08-7</td>
<td>1 - 5</td>
</tr>
<tr>
<td>2,3-Dimethylbutane</td>
<td>79-29-8</td>
<td>1 - 5</td>
</tr>
<tr>
<td>n-Octane</td>
<td>111-65-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Methylcyclopentane</td>
<td>96-37-7</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Flash point</th>
<th>-37 °C (-35 °F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>PMCC</td>
</tr>
<tr>
<td>Suitable extinguishing media</td>
<td>Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>High volume water jet.</td>
</tr>
<tr>
<td>Specific hazards during firefighting</td>
<td>Do not allow run-off from fire fighting to enter drains or water courses.</td>
</tr>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>Wear self-contained breathing apparatus for firefighting if necessary.</td>
</tr>
</tbody>
</table>

SDS Number:100000013939
## SECTION 6: Accidental release measures

### Personal precautions
- Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

### Environmental precautions
- Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

### Methods for cleaning up
- Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

## SECTION 7: Handling and storage

### Handling

#### Advice on safe handling
- Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

#### Advice on protection against fire and explosion
- Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

### Storage

#### Requirements for storage areas and containers
- No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working
## SECTION 8: Exposure controls/personal protection

### Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha, Petroleum, Heavy Catalytic Cracked</td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>400 ppm, 1,600 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>500 ppm, 2,000 mg/m$^3$</td>
<td>b).</td>
</tr>
<tr>
<td>Toluene</td>
<td>ACGIH</td>
<td>TWA</td>
<td>20 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-2</td>
<td>TWA</td>
<td>200 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-2</td>
<td>CEIL</td>
<td>300 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-2</td>
<td>Peak</td>
<td>500 ppm,</td>
<td></td>
</tr>
<tr>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>100 ppm, 375 mg/m$^3$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphtha (petroleum), light alkylate</td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>400 ppm, 1,600 mg/m$^3$</td>
<td>b).</td>
</tr>
<tr>
<td>Naphtha (petroleum), light catalytic reformed</td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>400 ppm, 1,600 mg/m$^3$</td>
<td>b).</td>
</tr>
<tr>
<td>3,3-Dimethylpentane</td>
<td>ACGIH</td>
<td>TWA</td>
<td>400 ppm,</td>
<td></td>
</tr>
<tr>
<td>Isopentane</td>
<td>ACGIH</td>
<td>TWA</td>
<td>500 ppm,</td>
<td></td>
</tr>
<tr>
<td>Naphtha (petroleum), heavy straight-run</td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>500 ppm, 2,000 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td>2,2,4-Trimethylpentane (Isooctane)</td>
<td>ACGIH</td>
<td>TWA</td>
<td>300 ppm,</td>
<td></td>
</tr>
<tr>
<td>n-Heptane</td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>500 ppm, 2,000 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>ACGIH</td>
<td>TWA</td>
<td>100 ppm, 435 mg/m$^3$</td>
<td>b).</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>100 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>150 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>STEL</td>
<td>150 ppm, 655 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>100 ppm, 435 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>100 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>STEL</td>
<td>150 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>800 ppm, 1,900 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td>n-Butane</td>
<td>ACGIH</td>
<td>STEL</td>
<td>1,000 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>200 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>500 ppm, 2,000 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>400 ppm, 1,600 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>10 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>STEL</td>
<td>15 ppm,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>10 ppm, 50 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>10 ppm, 50 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>STEL</td>
<td>15 ppm, 75 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>500 ppm, 2,000 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1-A</td>
<td>TWA</td>
<td>400 ppm, 1,600 mg/m$^3$</td>
<td></td>
</tr>
<tr>
<td>2-Methylpentane</td>
<td>ACGIH</td>
<td>TWA</td>
<td>500 ppm,</td>
<td></td>
</tr>
<tr>
<td>2-Methylhexane</td>
<td>ACGIH</td>
<td>TWA</td>
<td>400 ppm,</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- **OSHA:** Occupational Safety and Health Administration
- **ACGIH:** American Conference of Governmental Industrial Hygienists
- **TWA:** Time Weighted Average
- **STEL:** Short Term Exposure Limit
- **CEIL:** Ceiling Limit

**Materials must comply with the technological safety standards.**
### 1. SAFETY DATA SHEET

**UTG 96 (unleaded test gasoline)**

**Version 5.0**  
Revision Date 2016-06-16

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH</th>
<th>TWA</th>
<th>STEL</th>
<th>OSHA Z-1-A</th>
<th>OSHA Z-1-A</th>
<th>OSHA Z-2</th>
<th>OSHA 29 CFR 1910.1028(c)</th>
<th>OSHA ZARC</th>
<th>OSHA CARC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3-Methylhexane</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>400 ppm</td>
<td>0 ppm</td>
<td>1 ppm</td>
<td>1 ppm</td>
<td>500 ppm</td>
<td>50 ppm</td>
<td>5 ppm</td>
</tr>
<tr>
<td><strong>Benzene</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>400 ppm</td>
<td>0 ppm</td>
<td>1 ppm</td>
<td>1 ppm</td>
<td>500 ppm</td>
<td>50 ppm</td>
<td>5 ppm</td>
</tr>
<tr>
<td><strong>3-Methylpentane</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>500 ppm</td>
<td>1,000 ppm</td>
<td>1,800 mg/m³</td>
<td>1,800 mg/m³</td>
<td>2,500 ppm</td>
<td>3,600 mg/m³</td>
<td>5 ppm</td>
</tr>
<tr>
<td><strong>n-hexane</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>50 ppm</td>
<td>50 ppm</td>
<td>1,800 mg/m³</td>
<td>1,800 mg/m³</td>
<td>500 ppm</td>
<td>1,800 mg/m³</td>
<td>5 ppm</td>
</tr>
<tr>
<td><strong>Methylcyclopentane</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>500 ppm</td>
<td>1,000 ppm</td>
<td>1,800 mg/m³</td>
<td>1,800 mg/m³</td>
<td>2,500 ppm</td>
<td>3,600 mg/m³</td>
<td>5 ppm</td>
</tr>
<tr>
<td><strong>1,2,4-Trimethylbenzene</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>25 ppm</td>
<td>25 ppm</td>
<td>125 mg/m³</td>
<td>125 mg/m³</td>
<td>25 ppm</td>
<td>25 ppm</td>
<td>5 ppm</td>
</tr>
<tr>
<td><strong>Ethylbenzene</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>25 ppm</td>
<td>100 ppm</td>
<td>100 ppm</td>
<td>125 mg/m³</td>
<td>125 mg/m³</td>
<td>25 ppm</td>
<td>25 ppm</td>
</tr>
<tr>
<td><strong>n-Octane</strong></td>
<td>ACGIH</td>
<td>TWA</td>
<td>25 ppm</td>
<td>100 ppm</td>
<td>100 ppm</td>
<td>125 mg/m³</td>
<td>125 mg/m³</td>
<td>25 ppm</td>
<td>25 ppm</td>
</tr>
</tbody>
</table>

### 2. Additional Information

- **Adopted values or notations enclosed are those for which changes are proposed in the NIC.**
- **(a)** This standard applies to the industry segments exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard at 1910.1028.
- **(b)** The value in mg/m³ is approximate.
- **A1** Confirmed human carcinogen
- **A2** Confirmed animal carcinogen with unknown relevance to humans
- **A3** Not classifiable as a human carcinogen
- **asthma** Asthma
- **BEI** Substances for which there is a Biological Exposure Index or Indices (see BEI® section)
- **cancer** Cancers
- **CNS impair** Central Nervous System impairment
- **eye darn** Eye damage
- **eye irri** Eye irritation
- **female repro** Female reproductive
- **hematol og eff** Hematologic effects
- **hemolytic anemia** Hemolytic anemia
- **leukemia** Leukemia
- **P** Application restricted to conditions in which there are negligible aerosol exposures
- **neuropathy** Peripheral neuropathy
- **pregnancy loss** Pregnancy loss

### 3. OSHA Standards

- **OSHA 29 CFR 1910.1028(c)**
- **OSHA 29 CFR 1910.1028(c)**
- **OSHA 29 CFR 1910.1028(c)**

### 4. ACGIH Standards

- **ACGIH**
- **ACGIH**
- **ACGIH**

### 5. Additional Remarks

- **Peripheral neuropathy**
- **Hemolytic anemia**
- **Female reproductive**
- **Peripheral neuropathy**
- **Pregnancy loss**

---

**SDS Number:** 100000013939  
**Page:** 7/26
### Skin
- Danger of cutaneous absorption
- Skin irritation
- Upper Respiratory Tract irritation
- Visual impairment

### Hazardous components without workplace control parameters

#### Immediately Dangerous to Life or Health Concentrations (IDLH)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value 500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>Immediately Dangerous to Life or Health Concentration Value 750 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>Immediately Dangerous to Life or Health Concentration Value 900 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value 250 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Immediately Dangerous to Life or Health Concentration Value 500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1100 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>Immediately Dangerous to Life or Health Concentration Value 800 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>109-66-0</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Octane</td>
<td>111-65-9</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1000 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value 500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>Immediately Dangerous to Life or Health Concentration Value 750 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>Immediately Dangerous to Life or Health Concentration Value 900 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value 250 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Immediately Dangerous to Life or Health Concentration Value 500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1100 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>Immediately Dangerous to Life or Health Concentration Value 800 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>109-66-0</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Octane</td>
<td>111-65-9</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1000 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Methylcyclohexane</td>
<td>108-87-2</td>
<td>Immediately Dangerous to Life or Health Concentration Value 1200 ppm</td>
<td>1995-03-01</td>
</tr>
</tbody>
</table>

SDS Number: 100000013939

8/26
<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Sampling time</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclohexane</td>
<td>110-82-7</td>
<td>Immediately Dangerous to Life or Health</td>
<td>1300 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>Immediately Dangerous to Life or Health</td>
<td>2100 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Immediately Dangerous to Life or Health</td>
<td>500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>Immediately Dangerous to Life or Health</td>
<td>750 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>Immediately Dangerous to Life or Health</td>
<td>900 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Immediately Dangerous to Life or Health</td>
<td>200 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>m-xylene</td>
<td>108-38-3</td>
<td>Immediately Dangerous to Life or Health</td>
<td>900 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>p-xylene</td>
<td>106-42-3</td>
<td>Immediately Dangerous to Life or Health</td>
<td>900 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>Immediately Dangerous to Life or Health</td>
<td>500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>Immediately Dangerous to Life or Health</td>
<td>1100 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>o-xylene</td>
<td>95-47-6</td>
<td>Immediately Dangerous to Life or Health</td>
<td>900 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>Immediately Dangerous to Life or Health</td>
<td>800 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>109-66-0</td>
<td>Immediately Dangerous to Life or Health</td>
<td>1500 ppm</td>
<td>1995-03-01</td>
</tr>
<tr>
<td>n-Octane</td>
<td>111-65-9</td>
<td>Immediately Dangerous to Life or Health</td>
<td>1000 ppm</td>
<td>1995-03-01</td>
</tr>
</tbody>
</table>

**Biological exposure indices**

**US**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Sampling time</th>
<th>Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Toluene: 0.02 mg/l (in blood)</td>
<td>Prior to last shift of workweek</td>
<td>2010-03-01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toluene: 0.03 mg/l (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2010-03-01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o-Cresol: 0.3 mg/g Creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2010-03-01</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>Methylhippuric acids: 1.5 g/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2013-03-01</td>
</tr>
<tr>
<td>m-xylene</td>
<td>108-38-3</td>
<td>Methylhippuric acids: 1.5 g/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2013-03-01</td>
</tr>
<tr>
<td>p-xylene</td>
<td>106-42-3</td>
<td>Methylhippuric acids: 1.5 g/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2013-03-01</td>
</tr>
</tbody>
</table>

SDS Number: 100000013939
### UTG 96 (unleaded test gasoline)

#### Safety Data Sheet

**Version 5.0**  
**Revision Date 2016-06-16**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Test Parameter</th>
<th>Limit</th>
<th>Reference Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>S-Phenylmercapturic acid: 25 µg/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2010-03-01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,4-Muconic acid: 500 µg/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2010-03-01</td>
</tr>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>2,5-Hexanedione: 0.4 mg/l (Urine)</td>
<td>End of shift at end of workweek</td>
<td>2007-01-01</td>
</tr>
<tr>
<td>o-xylene</td>
<td>95-47-6</td>
<td>Methylhippuric acids: 1.5 g/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2013-03-01</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>Sum of mandelic acid and phenyl glyoxylic acid: 0.15 g/g creatinine (Urine)</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>2014-03-01</td>
</tr>
</tbody>
</table>

### Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

### Personal protective equipment

#### Respiratory protection

Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

#### Hand protection

The suitability for a specific workplace should be discussed with the producers of the protective gloves. For prolonged or repeated contact use protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

#### Eye protection

Eye wash bottle with pure water. Tightly fitting safety goggles.

#### Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.

#### Hygiene measures

When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

### SECTION 9: Physical and chemical properties

#### Information on basic physical and chemical properties

**SDS Number:** 100000013939  
**Date:** 10/26
**Appearance**
Form: Liquid
Physical state: Liquid
Color: Yellow, pale
Odor: Mild

**Safety data**
Flash point: -37 °C (-35 °F)
Method: PMCC
Lower explosion limit: No data available
Upper explosion limit: No data available
Molecular formula: Mixture
Molecular weight: Not applicable
pH: Not applicable
Pour point: No data available

Boiling point/boiling range: 33.8 - 204 °C (92.8 - 399 °F)
Vapor pressure: 9.00 PSI
at 38 °C (100 °F)
Relative density: 0.74
at 16 °C (61 °F)
Water solubility: Negligible
Partition coefficient: n-octanol/water: No data available
Viscosity, kinematic: No data available
Relative vapor density: 3.8
(Air = 1.0)
Evaporation rate: No data available

**SECTION 10: Stability and reactivity**

Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions
Conditions to avoid: Heat, flames and sparks.
Other data: No decomposition if stored and applied as directed.
### SECTION 11: Toxicological information

**UTG 96 (unleaded test gasoline)**

#### Acute oral toxicity

- **LD50 Oral**: 2,186 mg/kg  
  - Species: Rat  
  - Method: Acute toxicity estimate

#### Acute inhalation toxicity

- **LC50**: 10.98 mg/l  
  - Exposure time: 4 h  
  - Species: Rat  
  - Test atmosphere: vapor  
  - Method: Acute toxicity estimate

#### Acute dermal toxicity

- **LD50 Dermal**: 3,509 mg/kg  
  - Species: Rabbit  
  - Method: Acute toxicity estimate

#### Skin irritation

- May cause skin irritation in susceptible persons.

#### Eye irritation

- May irritate eyes.

#### Sensitization

- No data available.

#### Repeated dose toxicity

- No data available

#### Carcinogenicity

- Method: No information available.

### Reproductive toxicity

**Toluene**

- Species: Rat  
  - Application Route: Inhalation  
  - Dose: 0, 100, 500, 2000 ppm  
  - Test period: 95 d  
  - NOAEL Parent: 2000 ppm

**Naphtha (petroleum), light alkylate**

- Species: Rat  
  - Sex: male  
  - Application Route: Inhalation  
  - Dose: 0, 5.1, 12.5, 24.7 mg/L  
  - Number of exposures: 6 h/d, 7 d/wk  
  - Test period: 7 wks  
  - NOAEL Parent: 24.7 mg/l  
  - NOAEL F1: 24.7 mg/l
## UTG 96 (unleaded test gasoline)

### Species: Rat

**Sex:** female  
**Application Route:** Inhalation  
**Dose:** 0, 5.1, 12.5, 24.7 mg/L  
**Number of exposures:** 6 h/d, 7 d/wk  
**Test period:** 8 wks  
**NOAEL Parent:** 24.7 mg/l  
**NOAEL F1:** 24.7 mg/l

### Isopentane

- **Species:** Rat  
- **Sex:** male and female  
- **Application Route:** Inhalation (vapor)  
- **Dose:** 0, 500, 2000, 7000 ppm  
- **Number of exposures:** 6 h/d 5 d/wk  
- **Method:** OECD Test Guideline 416  
- **NOAEL Parent:** 7000 ppm  
- **NOAEL F1:** 2000 ppm  
- **NOAEL F2:** 2000 ppm  
- Information given is based on data obtained from similar substances.

### n-Heptane

- **Species:** Rat  
- **Application Route:** Inhalation  
- **Dose:** 0, 900, 3000, 9000 ppm  
- **Number of exposures:** 6 h/r, 5 d/wk  
- **Test period:** 13 wk  
- **Method:** OECD Test Guideline 416  
- **NOAEL Parent:** 9000 ppm  
- **NOAEL F1:** 3000 ppm  
- **NOAEL F2:** 3000 ppm
Application Route: Inhalation
Dose: 5,000 ppm
Number of exposures: 16 hr/d, 6 d/wk
Test period: 6 wks
permanent testicular damage characterized by loss of germ-cell line

2-methyl-2-butene
Species: Rat
Sex: male and female
Application Route: Inhalation
Dose: 580, 2000, 7000 ppm
Number of exposures: 6 h/d, 7 d/wk
Test period: 4 wks
Method: OECD Guideline 422
NOAEL Parent: 7000 ppm
NOAEL F1: 7000 ppm
no abnormalities observed

n-Pentane
Species: Rat
Sex: male
Application Route: Inhalation
Dose: 0, 5, 10, 20 mg/l
Exposure time: 13 wk
Test period: 6hrs/day, 5 days/wk
NOAEL Parent: 20 mg/l
no abnormalities observed

Species: Rat
Sex: female
Application Route: Inhalation
Dose: 0, 5, 10, 20 mg/l
Exposure time: 13 wk
Test period: 6hrs/day, 5 days/wk
NOAEL Parent: 20 mg/l
no abnormalities observed

Developmental Toxicity
Toluene
Species: Rat
Application Route: Inhalation
Dose: 0, 100, 500, 2000 ppm
Test period: 95 d
NOAEL Teratogenicity: 400-750 ppm

Isopentane
Species: Rat
Application Route: oral gavage
Dose: 0, 100, 500, 1000 mg/kg/d
Exposure time: GD 6-15
Number of exposures: daily
Method: OECD Guideline 414
NOAEL Teratogenicity: 1,000 mg/kg
NOAEL Maternal: 1,000 mg/kg
Information given is based on data obtained from similar substances.
<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>Application Route</th>
<th>Dose</th>
<th>Exposure time</th>
<th>Number of exposures</th>
<th>Method</th>
<th>NOAEL Teratogenicity</th>
<th>NOAEL Maternal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2,4-Trimethylpentane (isooctane)</td>
<td>Rat</td>
<td>Inhalation</td>
<td>0, 400, 1200 ppm</td>
<td>GD 6-15</td>
<td>6h/d</td>
<td>OECD Guideline 414</td>
<td>1200 ppm</td>
<td>1200 ppm</td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>Inhalation</td>
<td>0, 900, 3000, 9000 ppm</td>
<td>GD6-15</td>
<td>6h/d</td>
<td>OECD Guideline 414</td>
<td>9000 ppm</td>
<td>3000 ppm</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>Rat</td>
<td>Inhalation</td>
<td>0, 900, 3000, 9000 ppm</td>
<td>GD6-15</td>
<td>6 hrs/d</td>
<td>OECD Guideline 414</td>
<td>9000 ppm</td>
<td>3000 ppm</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>Rat</td>
<td>Inhalation</td>
<td>0, 805, 1610 ppm</td>
<td>GD 7-16</td>
<td>6 h/d</td>
<td>OECD Guideline 414</td>
<td>9000 ppm</td>
<td>1610 ppm</td>
</tr>
</tbody>
</table>
### UTG 96 (unleaded test gasoline)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Species</th>
<th>Application Route</th>
<th>Dose</th>
<th>Number of exposures</th>
<th>Test period</th>
<th>NOAEL Teratogenicity</th>
<th>NOAEL Maternal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene C9-C16</td>
<td>Rat</td>
<td>Inhalation</td>
<td>0, 106, 364 ppm</td>
<td>6 hrs/d</td>
<td>GD 6-15</td>
<td>364 ppm</td>
<td>364 ppm</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>Rabbit</td>
<td>oral gavage</td>
<td>40, 200, 400 mg/kg</td>
<td></td>
<td>GD 6-18</td>
<td>400 mg/kg</td>
<td></td>
</tr>
<tr>
<td>n-hexane</td>
<td>Rat</td>
<td>Inhalation</td>
<td>200, 1,000, 5,000 ppm</td>
<td>20 hr/d, daily</td>
<td>GD 6-20</td>
<td>200 ppm</td>
<td>200 ppm</td>
</tr>
<tr>
<td>2-methyl-2-butene</td>
<td>Rat</td>
<td>Inhalation</td>
<td>500, 2000, 8000 ppm</td>
<td>6 h/d</td>
<td>Days 5 -21</td>
<td>8000 ppm</td>
<td>8000 ppm</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>Rat</td>
<td>Inhalation</td>
<td>0, 1000, 3000, 10000 ppm</td>
<td>6 h/d</td>
<td>GD 6-15</td>
<td>10,000 ppm</td>
<td></td>
</tr>
</tbody>
</table>

**Aspiration toxicity**: The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human
aspiration toxicity hazard.

CMR effects

Naphtha, Petroleum, Heavy Catalytic Cracked: Carcinogenicity: Possible human carcinogen
Mutagenicity: In vivo tests showed mutagenic effects
Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

Toluene: Carcinogenicity: Not classifiable as a human carcinogen.
Mutagenicity: Animal testing did not show any mutagenic effects.
Teratogenicity: Some evidence of adverse effects on development, based on animal experiments.
Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

Isopentane: Carcinogenicity: Not available
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. In vivo tests did not show mutagenic effects
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: Animal testing did not show any effects on fertility.

Naphtha (petroleum), light catalytic reformed: Carcinogenicity: Possible human carcinogen
Mutagenicity: In vivo tests showed mutagenic effects

2,2,4-Trimethylpentane (Isooctane): Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: Animal testing did not show any effects on fertility.

n-Heptane: Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: No toxicity to reproduction

Benzene, dimethyl-: Carcinogenicity: Not classifiable as a human carcinogen.
Mutagenicity: Did not show mutagenic effects in animal experiments.
Teratogenicity: Damage to fetus not classifiable

Naphtha (petroleum), heavy straight-run Naphthalene: Carcinogenicity: Limited evidence of carcinogenicity in animal studies

Naphtha (petroleum), hydrotreated heavy: Carcinogenicity: Possible human carcinogen
Mutagenicity: In vivo tests showed mutagenic effects

Benzene: Carcinogenicity: Human carcinogen.
Mutagenicity: In vivo tests showed mutagenic effects
Teratogenicity: Did not show teratogenic effects in animal
experiments.
Reproductive toxicity: Animal testing did not show any effects on fertility.

n-hexane
Carcinogenicity: Not classifiable as a human carcinogen.
Mutagenicity: Did not show mutagenic effects in animal experiments.
Teratogenicity: Suspected of damaging the unborn child.
Reproductive toxicity: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

2-methyl-2-butene
Carcinogenicity: Limited evidence of carcinogenicity in animal studies
Mutagenicity: In vitro tests showed mutagenic effects
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: Animal testing did not show any effects on fertility.

Ethylbenzene
Mutagenicity: In vivo tests did not show mutagenic effects
Teratogenicity: Did not show teratogenic effects in animal experiments.
Reproductive toxicity: No toxicity to reproduction

UTG 96 (unleaded test gasoline)
Further information: Solvents may degrease the skin.

SECTION 12: Ecological information

Ecotoxicity effects

Toxicity to fish: Very toxic to fish.
Estimated based on individual component values.

Toxicity to daphnia and other aquatic invertebrates: Very toxic to aquatic organisms.
Estimated based on individual component values.

Toxicity to algae: Very toxic to algae.
Estimated based on individual component values.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Naphtha, Petroleum, Heavy Catalytic Cracked: NOELR: 2.6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
semi-static test
Method: OECD Test Guideline 211

2,2,4-Trimethylpentane (Isooctane): NOEC: 0.17 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Ethylbenzene: NOEC: 1 mg/l
Exposure time: 7 d
Species: Daphnia pulex (Water flea)
semi-static test
Analytical monitoring: yes

Elimination information (persistence and degradability)

Bioaccumulation : No data available
Biodegradability : No data available

**Ecotoxicology Assessment**

<table>
<thead>
<tr>
<th>Substance Description</th>
<th>Ecotoxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha, Petroleum, Heavy Catalytic Cracked</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>Toluene</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>Naphtha (petroleum), light alkylate</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>3,3-Dimethylpentane</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>Isopentane</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>2,2,4-Trimethylpentane (Isooctane)</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>Kerosene C9-C16</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>2-Methylpentane</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>2-Methylhexane</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>3-Methylhexane</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>Benzene</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>3-Methylpentane</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>n-hexane</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>2-methyl-2-butene</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>2,3-Dimethylpentane</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>2,4-Dimethylpentane</td>
<td>Very toxic to aquatic life.</td>
</tr>
</tbody>
</table>

SDS Number: 100000013939
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Aquatic Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-Dimethylbutane</td>
<td>Toxic to aquatic life.</td>
</tr>
<tr>
<td>n-Octane</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td></td>
</tr>
<tr>
<td>Naphtha, Petroleum, Heavy Catalytic Cracked</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Toluene</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Naphtha (petroleum), light alkylate</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>3,3-Dimethylpentane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Isopentane</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2,2,4-Trimethylpentane (Isooctane)</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Kerosene C9-C16</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2-Methylpentane</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2-Methylhexane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>3-Methylhexane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Benzene</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>3-Methylpentane</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>n-hexane</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2-methyl-2-butene</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2,3-Dimethylpentane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2,4-Dimethylpentane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>2,3-Dimethylbutane</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>n-Octane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

**Results of PBT assessment**
- Naphtha, Petroleum, Heavy Catalytic Cracked: Non-classified PBT substance, Non-classified vPvB substance
- Toluene: Non-classified vPvB substance, Non-classified PBT substance
- Isopentane: Non-classified PBT substance, Non-classified vPvB substance
SAFETY DATA SHEET

UTG 96 (unleaded test gasoline)

Version 5.0

Revision Date 2016-06-16

2,2,4-Trimethylpentane (Isooctane): Non-classified PBT substance, Non-classified vPvB substance
n-Heptane: Non-classified PBT substance, Non-classified vPvB substance
Benzene: This substance is not considered to be persistent, bioaccumulating and toxic (PBT), This substance is not considered to be very persistent and very bioaccumulating (vPvB).
n-hexane: Non-classified vPvB substance, Non-classified PBT substance
2-methyl-2-butene: Non-classified PBT substance, Non-classified vPvB substance
Ethylbenzene: Non-classified vPvB substance, Non-classified PBT substance
n-Octane: This substance is not considered to be persistent, bioaccumulating and toxic (PBT), This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Additional ecological information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN1203, GASOLINE, 3, II, MARINE POLLUTANT, (2,2,4-TRIMETHYL Pentane (Isooctane),

SDS Number:100000013939 21/26
N-HEPTANE)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1203, GASOLINE, 3, II, (-37 °C), MARINE POLLUTANT, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1203, GASOLINE, 3, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1203, MOTOR SPIRIT, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1203, GASOLINE, 3, II, ENVIRONMENTALLY HAZARDOUS, (NAPHTHA, PETROLEUM, HEAVY CATALYTIC CRACKED)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

CERCLA Reportable Quantity : 315 lbs
Isopentane

SARA 302 Reportable Quantity : Calculated RQ exceeds reasonably attainable upper limit.
Hydrogen Sulfide

SARA 302 Threshold Planning Quantity : The following components are subject to reporting levels established by SARA Title III, Section 302:
Hydrogen Sulfide 7783-06-4 500 lbs

SARA 304 Reportable : Calculated RQ exceeds reasonably attainable upper limit.
SAFETY DATA SHEET

UTG 96 (unleaded test gasoline)

Quantity

Hydrogen Sulfide 7783-06-4 100 lbs

SARA 313 Ingredients: The following components are subject to reporting levels established by SARA Title III, Section 313:

- Toluene - 108-88-3
- Benzene, dimethyl- - 1330-20-7
- Naphthalene - 91-20-3
- m-xylene - 108-38-3
- p-xylene - 106-42-3
- Benzene - 71-43-2
- n-hexane - 110-54-3
- o-xylene - 95-47-6
- 1,2,4-Trimethylbenzene - 95-63-6
- Ethylbenzene - 100-41-4

Clean Air Act

Ozone-Depletion Potential: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

- Toluene - 108-88-3
- 2,2,4-Trimethylpentane (Isooctane) - 540-84-1
- Benzene, dimethyl- - 1330-20-7
- Naphthalene - 91-20-3
- m-xylene - 108-38-3
- p-xylene - 106-42-3
- Benzene - 71-43-2
- n-hexane - 110-54-3
- o-xylene - 95-47-6
- Ethylbenzene - 100-41-4

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

- Isopentane - 78-78-4
- n-Butane - 106-97-8
- n-Pentane - 109-66-0
- trans-2-Pentene - 646-04-8
- Hydrogen Sulfide - 7783-06-4
- 2-methyl-1-butene - 563-46-2
- Isobutane - 75-28-5
- Propane - 74-98-6

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

- Toluene - 108-88-3
- Isopentane - 78-78-4
- Benzene, dimethyl- - 1330-20-7
- p-xylene - 106-42-3
- Benzene - 71-43-2
- o-xylene - 95-47-6
SAFETY DATA SHEET

UTG 96 (unleaded test gasoline)

Version 5.0
Revision Date 2016-06-16

SDS Number:100000013939

US State Regulations

Pennsylvania Right To Know
- Naphtha, Petroleum, Heavy Catalytic Cracked - 64741-54-4
- Toluene - 108-88-3
- Naphtha (petroleum), light alkylate - 64741-66-8
- 3,3-Dimethylpentane - 562-49-2
- Isopentane - 78-78-4
- Naphtha (petroleum), light catalytic reformed - 64741-63-5
- 2,2,4-Trimethylpentane (Isooctane) - 540-84-1
- n-Heptane - 142-82-5
- Benzene, dimethyl - 1330-20-7
- n-Butane - 106-97-8
- Kerosene C9-C16 - 8008-20-6
- Naphtha (petroleum), heavy straight-run - 64741-41-9
- Naphthalene - 91-20-3
- Naphtha (petroleum), hydrotreated heavy - 64742-48-9
- 2-Methylpentane - 107-83-5
- 2-Methylhexane - 591-76-4
- 3-Methylhexane - 589-34-4
- Benzene - 71-43-2
- 3-Methylpentane - 96-14-0
- n-hexane - 110-54-3
- 1,2,4-Trimethylbenzene - 95-63-6
- 2-methyl-2-butene - 513-35-9
- Ethylbenzene - 100-41-4
- n-Pentane - 109-66-0
- 2,3-Dimethylpentane - 565-59-3
- 2,4-Dimethylpentane - 108-08-7
- 2,3-Dimethylbutane - 79-29-8
- n-Octane - 111-65-9
- Methylcyclopentane - 96-37-7

New Jersey Right To Know
- Naphtha, Petroleum, Heavy Catalytic Cracked - 64741-54-4
- Toluene - 108-88-3
- Naphtha (petroleum), light alkylate - 64741-66-8
- 3,3-Dimethylpentane - 562-49-2
- Isopentane - 78-78-4
- 2,2,4-Trimethylpentane (Isooctane) - 540-84-1
- n-Heptane - 142-82-5
- Benzene, dimethyl - 1330-20-7
- n-Butane - 106-97-8
- Kerosene C9-C16 - 8008-20-6
- Naphthalene - 91-20-3
- 2-Methylpentane - 107-83-5
- 3-Methylhexane - 589-34-4
- Benzene - 71-43-2
- n-hexane - 110-54-3
- 1,2,4-Trimethylbenzene - 95-63-6
UTG 96 (unleaded test gasoline)

Ingredients:
- 2-methyl-2-butene - 513-35-9
- Ethylbenzene - 100-41-4
- n-Pentane - 109-66-0
- 2,3-Dimethylpentane - 565-59-3
- 2,4-Dimethylpentane - 108-08-7
- 2,3-Dimethylbutane - 79-29-8
- n-Octane - 111-65-9
- Methylcyclopentane - 96-37-7

California Prop. 65: WARNING! This product contains a chemical known in the State of California to cause cancer.

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

Notification status:
- Europe REACH: Not in compliance with the inventory
- United States of America TSCA: On the inventory, or in compliance with the inventory
- Canada NDSL: This product contains one or several components listed in the Canadian NDSL.
- Australia AICS: On the inventory, or in compliance with the inventory
- New Zealand NZIoC: Not in compliance with the inventory
- Japan ENCS: On the inventory, or in compliance with the inventory
- Korea KECI: Not in compliance with the inventory
- Philippines PICCS: Not in compliance with the inventory
- China IECSC: Not in compliance with the inventory

NFPA Classification:
- Health Hazard: 2
- Fire Hazard: 4
- Reactivity Hazard: 0

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is
not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

<table>
<thead>
<tr>
<th>Key or legend to abbreviations and acronyms used in the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACGIH</strong></td>
</tr>
<tr>
<td><strong>AICS</strong></td>
</tr>
<tr>
<td><strong>DSL</strong></td>
</tr>
<tr>
<td><strong>NDSL</strong></td>
</tr>
<tr>
<td><strong>CNS</strong></td>
</tr>
<tr>
<td><strong>CAS</strong></td>
</tr>
<tr>
<td><strong>EC50</strong></td>
</tr>
<tr>
<td><strong>EC50</strong></td>
</tr>
<tr>
<td><strong>EGEST</strong></td>
</tr>
<tr>
<td><strong>EOSCA</strong></td>
</tr>
<tr>
<td><strong>EINECS</strong></td>
</tr>
<tr>
<td><strong>MAK</strong></td>
</tr>
<tr>
<td><strong>GHS</strong></td>
</tr>
<tr>
<td>&gt;=</td>
</tr>
<tr>
<td><strong>IC50</strong></td>
</tr>
<tr>
<td><strong>IARC</strong></td>
</tr>
<tr>
<td><strong>IECSC</strong></td>
</tr>
<tr>
<td><strong>ENCS</strong></td>
</tr>
<tr>
<td><strong>KECI</strong></td>
</tr>
<tr>
<td>&lt;=</td>
</tr>
<tr>
<td><strong>LC50</strong></td>
</tr>
</tbody>
</table>