UNLEADED REGULAR GASOLINE (Including Reformulated)

Feburary 26, 1999

A. Product Identification

Synonyms: Motor Fuel; Petrol
Chemical Name: Mixture
Chemical Family: Hydrocarbon
Chemical Formula: Mixture
CAS Reg. No.: Mixture
Product No.: 1013868(12050); (12051); 1013930(12750) (12751); (12280); (12281); 1013910(12170); (12171) (12380); (12381); 1013922(12370); (12371)

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

B. Components

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS Number</th>
<th>% By Wt.</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline, including:</td>
<td>8006-61-9</td>
<td>100</td>
<td>NE</td>
<td>300 ppm</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>&lt;5</td>
<td>10 ppm(1)</td>
<td>0.5 ppm</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>1-35</td>
<td>200 ppm</td>
<td>50 ppm</td>
</tr>
<tr>
<td>Ethyl Benzene</td>
<td>100-41-4</td>
<td>0-4</td>
<td>100 ppm</td>
<td>100 ppm</td>
</tr>
<tr>
<td>Xylenes (mixed isomers)</td>
<td>1330-20-7</td>
<td>1-10</td>
<td>100 ppm</td>
<td>100 ppm</td>
</tr>
<tr>
<td>Methyl-tert-Butyl Ether</td>
<td>1634-04-4</td>
<td>0-16</td>
<td>NE</td>
<td>40 ppm</td>
</tr>
<tr>
<td>1,2,4-Trimethyl Benzene</td>
<td>95-63-6</td>
<td>0.5-2.5</td>
<td>NE</td>
<td>25 ppm(2)</td>
</tr>
<tr>
<td>Isopentane</td>
<td>78-78-4</td>
<td>&lt;20</td>
<td>NE</td>
<td>600 ppm</td>
</tr>
<tr>
<td>n-Butane</td>
<td>106-97-8</td>
<td>&lt;10</td>
<td>NE</td>
<td>800 ppm</td>
</tr>
</tbody>
</table>

(1) Areas covered by the Benzene Standard, 29 CFR 1910.1028, will have a 1 ppm 8 hour TWA and 5 ppm STEL.

(2) For Trimethyl benzene

C. Personal Protection Information
D. Handling and Storage Precautions

Do not get in eyes, on skin or on clothing. Do not breathe vapors, mist, fume or dust. Do not swallow, may be aspirated into lungs. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use only with adequate ventilation. Keep away from heat, sparks, and flames. Store in well-ventilated area. Store in tightly closed container. Bond and ground during transfer.

E. Reactivity Data

Stability: Stable
Conditions to Avoid: Not Applicable
Incompatibility (Materials to Avoid): Oxygen and strong oxidizing agents
Hazardous Polymerization: Will Not Occur
Conditions to Avoid: Not Applicable
Hazardous Decomposition Products: Carbon oxides and various hydrocarbons when burned.

F. Health Hazard Data

Recommended Exposure Limits:
See Section B.

Acute Effects of Overexposure:

Eye: May cause slight irritation.
Skin: May cause slight irritation. Not readily absorbed through the skin.
Inhalation: May cause sedation, drowsiness, headache, nausea, and vomiting.
Ingestion: May cause slight irritation of intestines. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs. The oral LD50, rat, for unleaded gasoline is 18.8 ml/kg.
**Subchronic and Chronic Effects of Overexposure:**

Unleaded gasoline has produced kidney cancer in male rats only. No comparable kidney disease is known to occur in humans.

Gasolines generally contain benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), and the Occupational Safety and Health Administration (OSHA). Benzene may produce blood changes which include reduced platelets, red blood cells, and white blood cells.

Also, aplastic anemia, and acute nonlymphotic leukemia. Benzene has produced fetal death in laboratory animals and caused chromosome changes in humans and mutation changes in cells of other organisms.

Isopentane did not produce kidney damage in a subchronic oral laboratory study or in a subchronic inhalation exposure to 4500 ppm isopentane alone or 1000 ppm of a 50/50 mixture of isobutane and isopentane.

Exposure of pregnant rats during gestation to toluene at levels 250 ppm and higher produced some maternal toxicity and embryo/fetotoxicity. A lifetime inhalation study in rats did not show any toxic effects even at the high dose of 300 ppm.

Behavioural signs of hearing loss were observed in rats exposed to toluene subchronically at levels of 1000 ppm or more. Comparable effects have not been reported in humans.

Inhalation studies were conducted with experimental animals at dose levels that caused signs of toxicity which included central nervous system depression, decreased body weight, increased mortality, and decreased survival time. MTBE did not cause neurotoxicity at doses that caused central nervous system depression nor reproductive toxicity at doses that caused parental toxicity. Developmental effects (fetal toxicity) were associated with parental toxicity. Increased incidence of carcinogenic effects (kidneys, testicles, liver) were observed at otherwise toxic concentrations in rodents.

Ethylbenzene has caused fetotoxicity and liver and kidney injury in laboratory animals. No comparable injury has been reported in humans.

Liver and kidney changes have been noted in long term studies in animals exposed to xylenes. Fetotoxicity has been observed in animals with subchronic exposure to mixed xylenes at concentrations approximately five times the permissible exposure limit.

An epidemiology study of workers exposed to two isomers of trimethylbenzene had symptoms of nervousness, tension and anxiety, and asthmatic bronchitis. In addition, after inhalation of 60 ppm measured as hydrocarbon vapor, the workers' peripheral blood showed a tendency to hypochromic anemia and a deviation from normal in the coagulability of the blood.

**Other Health Effects:**

Combustion, a normal use of gasoline, results in an exhaust that has been associated with skin cancer in laboratory animals. Skin cancer was observed in these animals when exhaust was concentrated and repeatedly applied to the skin. This is not a normal route of exposure relevant to humans.

Mutagenicity test results were predominantly negative. Positive results were observed in two in vitro tests (Ames Assay & Sister Chromatid Exchange) after metabolic activation indicating that the positive results were due to MTBE metabolites (formaldehyde or tert-butyl alcohol). In intact living systems (in vivo mutagenicity testing) MTBE did not cause mutagenic activity chromosomal aberrations, unscheduled DNA repair, or mutation in germ cells.

Combustion (burning) of most carbon-containing material forms carbon monoxide. Carbon monoxide inhalation may cause carboxyhemoglobinemia.
Chronic exposure to carbon monoxide causes fatigue, poor memory, loss of sensation in fingers, visual disturbances and insomnia.

Carboxyhemoglobinemia is frequently misdiagnosed as flu.

Sensitive sub-populations to the inhalation of carbon monoxide exist.

Carbon monoxide displaces oxygen in the bloodstream and therefore, can adversely effect people with pre-existing heart disease, pregnant women and smokers.

A Toxicity Study Summary for Toluene is available upon request.

A Toxicity Study Summary for Isopentane, Commercial Grade, is available upon request.

**Health Hazard Categories:**

<table>
<thead>
<tr>
<th>Animal</th>
<th>Human</th>
<th>Animal</th>
<th>Human</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known Carcinogen</td>
<td>X</td>
<td>X</td>
<td>Toxic</td>
</tr>
<tr>
<td>Suspect Carcinogen</td>
<td>X</td>
<td>-</td>
<td>Corrosive</td>
</tr>
<tr>
<td>Mutagen</td>
<td>-</td>
<td>-</td>
<td>Irritant</td>
</tr>
<tr>
<td>Teratogen</td>
<td>-</td>
<td>-</td>
<td>Target Organ Toxin</td>
</tr>
<tr>
<td>Allergic Sensitizer</td>
<td>-</td>
<td>-</td>
<td>Specify - Blood Toxin; Reproductive Toxin - Embryo/Fetotoxin; Lung - Aspiration Hazard; Kidney Toxin; Liver Toxin</td>
</tr>
<tr>
<td>Highly Toxic</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**First Aid and Emergency Procedures:**

Eye: Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Skin: Wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

Note to Physician: Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

**G. Physical Data**

- **Appearance:** Clear to pink liquid
- **Odor:** Mild
- **Boiling Point:** 75 - 437F (24 - 225C)
- **Vapor Pressure:** 6.4 - 15.0 psia @ 100F (38C)
- **Vapor Density (Air = 1):** 3 - 4
- **Solubility in Water:** Negligible
- **Specific Gravity (H2O = 1):** 0.69 - 0.77 @ 60/60F (16/16C)
- **Percent Volatile by Volume:** 100
- **Evaporation Rate (Butyl Acetate = 1):** > 1
- **Viscosity:** Not Established

**H. Fire and Explosion Data**

- **Flash Point (Method Used):** <-35F (-37C) (Estimated)
- **Flammable Limits (% by Volume in Air):** LEL - 1.5
I. Spill, Leak and Disposal Procedures

Precautions Required if Material is Released or Spilled:

Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain spill. Protect from ignition. Keep out of water sources and sewers. Absorb in a dry, inert material (sand, clay, etc). Transfer to disposal drums using non-sparking equipment.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):

Incinerate or place in permitted waste management facility.

J. DOT Transportation

Shipping Name: Gasoline
Hazard Class: 3 (Flammable liquid)
ID Number: UN 1203
Packing Group: II
Marking: Gasoline, UN 1203
Label: Flammable liquid
Placard: Flammable/1203
Hazardous Substance/RQ: Not Applicable
Shipping Description: Gasoline, 3 (Flammable liquid), UN 1203, PG II
Packaging References: 49 CFR 173.150, 173.202, 173.242

K. RCRA Classification - Unadulterated Product as a

Ignitable (D001)

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

L. Protection Required for Work on Contaminated Equi
Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

M  Hazard Classification

_X_ This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

___ Combustible Liquid ___ Flammable Aerosol ___ Oxidizer
___ Compressed Gas ___ Explosive ___ Pyrophoric
_X_ Flammable Gas _X_ Health Hazard (Section F) ___ Unstable
_X_ Flammable Liquid ___ Organic Peroxide ___ Water Reactive
___ Flammable Solid

Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

N.  Additional Comments

SARA 313

This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(See Section B).

Benzene
Toluene
Methyl-tert-butyl ether
Ethyl benzene
Xylenes (mixed isomers)
1,2,4-Trimethyl Benzene

NFPA 704 Hazard Codes - - - - - - - - Signals

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Special Haz.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least - 0</td>
<td>Slight - 1</td>
<td>Moderate - 2</td>
<td>High - 3</td>
</tr>
</tbody>
</table>

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