MATERIAL SAFETY DATA SHEET

SECTION I – COMPANY IDENTIFICATION

Manufacturer: AGE Refining
7811 South Presa Street
San Antonio, TX 78223

Telephone Numbers:
Office: (210) 532-5300
24 hr. Emergency Contact: CHEMTREC: (800) 424-9300

Date Prepared: January, 2005
Revision 1
Revision Date: September 18, 2008

SECTION II – HAZARDOUS INGREDIENTS

OSHA Hazardous Components (29 CFR 1910.1200) Permissible Exposure Limits: 8 Hr. TWA

JP – 8, also known as MIL-DTL-83133E Jet Fuel or kerosene, is a mixture of C7 to C13 aliphatic, olefinic, and aromatic hydrocarbons.

<table>
<thead>
<tr>
<th>CAS #</th>
<th>APPROX VOL %</th>
<th>OSHA PEL</th>
<th>ACGIH TWA</th>
<th>NIOSH STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>0.4</td>
<td>10 ppm</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>0.3</td>
<td>100 ppm</td>
<td>100 ppm</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>95-63-4</td>
<td>1</td>
<td>25 ppm</td>
<td>25 ppm</td>
</tr>
</tbody>
</table>

SECTION III – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: WARNING! Flammable liquid. Inhalation may cause narcotic effects leading to respiratory arrest. Severe irritant to eyes. Skin irritant with prolonged contact. Ingestion may result in vomiting and central nervous system depression.

POTENTIAL HEALTH EFFECTS:

INHALATION: Vapors may irritate the nose, throat, and respiratory tract. Inhalation of high vapor concentrations may cause central nervous system (CNS) depression. Symptoms of CNS depression include giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. May cause narcotic effects such as dizziness, headache, uncoordination, anesthesia, coma, irregular heart rate and respiratory arrest. Oxygen deprivation possible when working in confined areas.

EYE CONTACT: Severe burning sensation with temporary irritation and swelling of eyelids.

SKIN CONTACT: Liquid irritates the skin. Prolonged contact can cause defatting and drying of the skin. Pre-existing skin disorders may be aggravated by exposure.

INGESTION: Harmful. Irritates mucus membranes of throat, esophagus, and stomach. Ingestion may result in vomiting. If absorbed, central nervous system depression may occur. Ingestion of aromatic hydrocarbons may cause hematopoietic changes.

ACUTE: Acute exposure may cause damage to the liver, kidneys, pancreas, and spleen.

CHRONIC: No known major cumulative effects have been reported.
CARCINOGENICITY: Listed in NTP? Yes (Naphthalene) IARC? Yes Ethylbenzene, Group 2B  
(ETHYL BENZENE) Naphthalene, Group 2B  
OSHA Regulated? No

SECTION IV – FIRST AID MEASURES

INHALATION: Remove to fresh air. Supply oxygen if breathing is difficult. If not breathing, apply artificial respiration. Seek medical attention.

EYE CONTACT: Flush with large amounts of running water for 15 minutes. Hold lids apart to ensure flushing of the entire eye. Seek medical attention.

SKIN CONTACT: Remove contaminated clothes and footwear. Wash exposed area with soap and large amounts of water for 15 minutes or until no evidence of product remains. Seek medical advice if irritation develops.

INGESTION: DO NOT INDUCE VOMITING. Get medical attention. If spontaneous vomiting occurs, keep head below hips.

NOTE TO PHYSICIAN: Gastric lavage only if large quantity has been ingested. Aspiration into lungs may result in chemical pneumonitis, pulmonary edema, and hemorrhage. Irregular heartbeat may occur, use of adrenalin is not advised. Treat symptomatically.

SECTION V – FIRE FIGHTING MEASURES

Flashpoint (method): 100 – 115°F (Pensky-Martens Method)  
Flammable Limits:  
Lower: 0.9%  
Upper: 6%  
Auto ignition Temperature: 450 – 500°F

GENERAL HAZARD: DANGER! Flammable material. Product is a floating hazard. Clear area of unprotected personnel and isolate. Vapors are denser than air, flashback along vapor trail may occur. Flowing product can be ignited by self-generated static electricity. Containers should be bonded and grounded. Rags or similar organic materials contaminated with this product may spontaneously combust in an enclosed space.

FIRE FIGHTING INSTRUCTIONS: Approach fire from upwind side. Avoid breathing smoke, fumes, mist, or vapors. Firefighters wear protective clothing and self contained breathing apparatus.

EXTINGUISHING MEDIA: Use extinguishing media such as foam, dry chemical, carbon dioxide, or fog. Water in straight hose steam may scatter product and spread the fire. Cool containers exposed to heat with water to prevent vapor pressure buildup leading to container rupture.

HAZARDOUS COMBUSTION PRODUCTS: Smoke, potentially toxic fumes, oxides of carbon, and aldehydes.

SECTION VI – ACCIDENTAL RELEASE MEASURES
DANGER!: Flammable liquid. Keep unnecessary and unprotected people away. Isolate hazard area. Eliminate all ignition sources. Handling equipment should be grounded to prevent sparks. Stay upwind. Use explosion proof equipment.

LARGE SPILL: Wear appropriate respirator and protective clothing. Eliminate all ignition sources. Shut off source of spill if safe to do so. Absorb and/or confine liquid with inert, non-combustible material. Water fog may be useful in suppressing vapor cloud. Keep spills and cleaning run-off out of municipal sewers and open waterways. Collect free product with vacuum truck or pump to storage container. Place waste in a chemical waste container for disposal. Continue to observe precautions for volatile, combustible vapors from absorbed material. Dispose waste products and contaminated materials according to all applicable local, state, and federal regulations. Advise authorities if product has entered or may enter sewers, watercourse or extensive land areas.

SMALL SPILL: Absorb product with inert material. Place waste in a chemical waste container for proper disposal. Advise authorities if product has entered or may enter sewers, watercourse or extensive land areas.

SECTION VII – HANDLING AND STORAGE

Keep liquid away from heat, sparks and flame. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment.

Use with adequate ventilation. Prevent vapor accumulation. Keep containers closed when not in use. Containers, even emptied, will retain product residue and can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Do not pressurize containers to empty them.

Avoid prolonged or repeated breathing of mist vapors. Do not get into eyes or on skin. Do not swallow. Wash hands thoroughly after handling material and before eating, drinking, smoking, or using restroom facilities.

Store in a cool, dry place away from oxidizers or oxidizing agents.

SECTION VIII – EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation to control vapor accumulation.

PERSONAL PROTECTION: Personal protection against inhalation of product is not normally needed under proper conditions of use and storage. If exposure may or does exceed occupational exposure limits, use a NIOSH approved respirator.

PROTECTIVE CLOTHING: Avoid contact with eyes; use chemical goggles to protect the eyes. Wear chemical resistant gloves, apron, and other impervious clothing as required to minimize contact. Air-dry contaminated clothing in well-ventilated space, launder before reusing.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>0.78 - 0.80</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Negligible</td>
</tr>
<tr>
<td>pH</td>
<td>NE</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>-47 ºC (MAX)</td>
</tr>
<tr>
<td>VOC Content</td>
<td>ca. 100%</td>
</tr>
<tr>
<td>Appearance &amp; Odor</td>
<td>Clear, colorless liquid with typical hydrocarbon odor.</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>NE</td>
</tr>
<tr>
<td>Evaporation Rate (n-Butyl Acetate=1)</td>
<td>NE</td>
</tr>
<tr>
<td>API Gravity</td>
<td>47 – 51</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>285ºF – 500ºF (141ºC – 260ºC)</td>
</tr>
</tbody>
</table>
SECTION X – STABILITY AND REACTIVITY

GENERAL: Stable.

INCOMPATIBLE MATERIALS: Keep away from strong oxidizing agents such as liquid chlorine, oxygen, and sodium hypochlorite. Contact with oxidizers may cause fires or explosions.

CONDITIONS TO AVOID: Keep away from sparks, flames and other ignition sources. Avoid vapor accumulation.

HAZARDOUS POLYMERIZATION: Is not known to occur.

SECTION XI – TOXICOLOGICAL INFORMATION

Both naphthalene and ethylbenzene are listed in IARC as Group 2B carcinogens: Possibly carcinogenic to humans.

SECTION XII – ECOLOGICAL INFORMATION

Kerosene and similar hydrocarbons are considered dangerous to aquatic life in high concentrations.

SECTION XIII – DISPOSAL CONSIDERATIONS

Classification and documentation is required before disposing of this product. If the product becomes a waste material, it may be an ignitable hazardous waste. Follow all local, state, and federal regulations.

SECTION XIV – TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Fuel, Aviation, Turbine Engine, 3, UN 1863, PG III
HAZARD CLASS: Flammable Liquid (3)
IDENTIFICATION NUMBER: UN 1863
DOT Emergency Guide #: 27
Reportable Quantity (RQ): NE

SECTION XV – REGULATORY INFORMATION

TSCA (Toxic Substance Control Act)
The components of this product are listed on the TSCA Inventory.

CERCLA (Comprehensive Environmental Response, Compensation and Liability Act):
None

SARA TITLE III (Superfund Amendments and Reauthorization Act):
311/312 Hazard Categories: Acute, fire
313 Reportable Ingredients:
- Naphthalene (CAS# 91-20-3): 0.4%, IARC 2B
- Ethylbenzene (CAS# 100-41-4): 0.3%, IARC 2B
- 1,2,4-Trimethylbenzene (CAS# 95-63-6): 1%
STATE REQUIREMENTS:
Components of this product may be regulated by various states. For details on specific state requirements, contact the appropriate agency in your state.

SECTION XVI – OTHER INFORMATION

NFPA and HMIS:
Health: 1  Flammability: 2  Reactivity: 0

PREPARED BY: Dale Wiedenfeld, AGE Refining, Inc. 210-532-5300
INFORMATION SUPPLIED BY: AGE Refining, Inc.
PREPARATION DATE: January, 2005
REVISION DATE: September 18, 2008

FOOTNOTES:
NA – NOT APPLICABLE  NE – DATA NOT ESTABLISHED  CS – CANCER SUSPECT AGENT
ND – NO DATA  COR – CORROSIVE  CALC – CALCULATED  EST – ESTIMATED
STEL – SHORT TERM EXPOSURE LIMIT  TLV – THRESHOLD LIMIT VALUE  OX – OXIDIZER
PEL – PERMISSIBLE EXPOSURE LIMIT  TWA – TIME WEIGHTED AVERAGE, 8 HOURS

THE INFORMATION RELATES TO THIS SPECIFIC MATERIAL. IT MAY NOT BE VALID FOR THIS MATERIAL IF USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. IT IS THE USER’S RESPONSIBILITY TO SATISFY ONESELF AS TO THE SUITABILITY AND COMPLETENESS OF THIS INFORMATION FOR HIS OWN PARTICULAR USE. NEITHER THE SELLER NOR PREPARER MAKES ANY WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE INFORMATION PRESENTED.