KEROSENE #1

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Amerada Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095

COMPANY CONTACT: Corporate Safety
PHONE NUMBER: 732/793-6000

EMERGENCY TELEPHONE NUMBER
CHEMTEC (800) 441-2504 24 hrs

PRODUCT NAME: Kerosene
CHEMICAL NAME: Ketone
CAS NUMBER: 126-41-7

SYNONYMS: Air Diesel Fuel
Kerosene
Kerosene Motor Fuel

See Section 16 for Glossary of terms and acronyms.

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>EXPOSURE LIMIT</th>
<th>CONCENTRATION</th>
<th>PERCENT BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene</td>
<td>100 ppm</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Methane</td>
<td>10 ppm</td>
<td>&lt; 1.0</td>
<td></td>
</tr>
</tbody>
</table>

* as mineral oil mist, severely refined

Kerosene is a petroleum fraction consisting of a complex mixture of hydrocarbons, including naphthenes, paraffins, and aromatics.

3. HAZARDS IDENTIFICATION

OSHA/NIOSH COMBUSTIBLE LIQUID - EYE AND SKIN IRRITANT - EFFECTS THE CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF SWALLOWED - ASPIRATION

- Moderate fire hazard. Avoid breathing vapors or mists. May cause
  - Temporary or permanent blindness. May cause moderate eye irritation and skin
  - Irritation, dermatitis and/or dermatitis (rash). Long-term, repeated
  - Exposure may cause skin cancer.

- If ingested, do not induce vomiting as this may cause chemical pneumonitis
  (fluid in the lungs)

********* POTENTIAL HEALTH EFFECTS *********

PRIMARY ROUTES OF ENTRY

Inhalation: primary
Ingestion: possible

EYE

SLIGHT TO MODERATE IRRITANT: Contact or exposure to vapors, mists or liquids may cause irritation and slight redness of the eyes.

Revision Date: 01/04/74
3. HAZARDS IDENTIFICATION - Continued

SKIN
SLIGHT TO MODERATE IRRITANT. Contact may cause irritation to the skin and mucous membranes upon prolonged and/or repeated skin contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are exposed. Prolonged or repeated contact with the skin may cause delisting of the skin leading to redness, itching, inflammation, cracking, dermatisis (rash), and possible secondary infection.

High pressure skin injections are serious medical emergencies. The appearance of fluid may be delayed for a few hours, but may cause tissue to become swollen, discolored and extremely painful; permanent damage or death may result without adequate medical treatment.

INGESTION
The major health threat of ingestion occurs from the danger of aspiration (inhalation) of liquid droplets into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, such as irritation, nausea, vomiting and diarrhea, and central nervous system effects similar to intoxication by ethyl alcohol. Acute symptoms of intoxication are most common, including excitation, restlessness, incoordination, euphoria, headache, disorientation, dizziness, drowsiness, blurred vision, and fatigue. In more severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION
Vapors may cause nose and throat irritation, anesthetic effects and central nervous system (CNS) depression. Inhalation may result in disorientation, dizziness, headache, and other symptoms similar to those listed under "Ingestion".

Inhalation of high concentrations can cause rapid CNS depression, cardiac arrhythmia, unconsciousness, coma, and possibly death resulting from respiratory failure. Systemic effects to the liver, kidneys, central nervous system, and blood have been reported from large and/or repeated or prolonged exposure.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC (CANCER INFORMATION)
This product is not expected to be a cancer hazard under normal conditions of use. Similar products produced skin cancer and skin tumors in laboratory animals following repeated applications. The significance to human exposure has not been determined - see Section 11. Toxicological Information.

IARC classifies whole diesel exhaust as probably carcinogenic (Group 2A) and suggests that it is a potential cause of occupational lung cancer (Tumorigen) based on animal studies and limited evidence in humans.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Irritation from skin exposure may aggravate existing open skin wounds, skin disruction and dermatitis (rash) conditions. Chronic respiratory disease, liver or kidney dysfunction, or pre-existing central nervous system disorders may be aggravated by exposure.

4. FIRST AID MEASURES

EYES
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

Revision Date: 01/04/94
4. FIRST AID MEASURES - Continued

BURN
Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleaner. Obtain medical attention if irritation or redness develops. High pressure injections are serious medical emergencies - seek immediate medical attention.

INGESTION
DO NOT INDUCE VOMITING BECAUSE OF THE DANGER OF BREATHING OF LIQUID INTO THE LUNGS. Seek immediate medical attention. Rinse mouth with water. Administer 1 to 2 glasses of water or milk to drink. Never administer liquids to an unconscious person.

If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Seek medical attention. Monitor for breathing difficulty.

INHALATION
Remove person to fresh air. If person is not breathing, ensure an open airway and administer CPR. If necessary, provide additional air or oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: > 100°F - 37.8°C TCC
AUTOIGNITION: 410°F 210°C
LOWER EXPLOSIVE LIMIT (%): 0.7
UPPER EXPLOSIVE LIMIT (%): 5.0

FIRE AND EXPLOSION HAZARDS
UNSA and NFPA Class III Flammable Liquid (see Section 14 for transportation classification). When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA
SMALL FIRES: Any extinguisher suitable for Class B fires - dry chemical, CO2, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

FIRE FIGHTING INSTRUCTIONS
Small fires in the incident (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Fire fighting activities that may result in potential exposure to high heat, smoke or toxic byproducts of combustion should rely on NIOSH/MSHA-approved self-contained breathing apparatus (SCBA) with full-facepiece and full protective firefighting clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. If leak or spill has not ignited, ventilate area and determine if water spray would assist in dispersing gas or vapor to protect personnel attempting to stop leak. Water may be useful in flushing spills away from ignition sources; however, do NOT flush fuel down public sewers or other drainage systems.

For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personal exposure. Water fires may require withdrawal, closing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

Revision Date: 01/04/94
5. FIRE FIGHTING MEASURES - Continued

FIRE FIGHTING INSTRUCTIONS - Continued
See Section 6 for NFPA 494 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE YOUR FACILITY'S SPILL CONTINGENCY PLAN (e.g. SPC, RCRA, or EMERGENCY plan), if available.

Evacuate nonessential Personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and up hill, if possible. Follow the direction of product travel, diking, severs, etc. to contain spill areas.

Carefully contain and stop the source of the spill. If safe to do so. Do not flush upon sewer or drainage systems. Protect bodies of water by diking. If possible. The use of fire fighting foam may be useful in certain situations to reduce vapors.

SMALL SPILLS: Take up with sand or other all absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Cleanup crews must be properly trained and must utilize proper protective equipment.

LARGE SPILLS: Dike far ahead of the spill. The proper use of water spray may effectively disperse product vapors of the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Consideration should be given to environmental clean-up and waste material generation when determining if the use of large volumes of water is appropriate for non-fire emergency situations. Cleanup crews must be properly trained and must utilize proper protective equipment.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS
Handle as a combustible liquid. Keep away from heat, sparks, and open flame. No smoking or open flame in storage, use or handling areas. Keep containers closed and clearly labeled. Ground all drums and transfer vessels when handling. Empty product containers or vessels may contain explosive vapors. Do not pressure test, cut, heat, weld, or expose such container to sources of ignition. Use only with adequate ventilation. Avoid breathing vapors. Do not use as a cleaning agent.

STORAGE PRECAUTIONS
Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Store in a well-ventilated area. This storage area should comply with NFPA 30 ("Flammable and Combustible Liquid Code"). Class II Combustible Liquids. Avoid contact with incompatible materials.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when this material is loaded into tanks previously containing low flash point products (such as gasoline) - see API Publication 2007. "Prevention Against Ignition Arising Out Of Static, Lightning and Spark Currents". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES
Emergency eye wash capability should be available in the vicinity of any product storage. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a chemical solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product.

Revision Date: 01/04/94
7. HANDLING AND STORAGE - Continued

From exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS
Use adequate ventilation to keep vapor and mist concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting in classified/controlled areas.

PEE/FACE PROTECTION
Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

SKIN PROTECTION
Avoid repeated or prolonged skin contact. Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as Saranex (R) or Barricade (R) or equivalent recommended based on degree of exposure.

(R) Saranex and Barricade are registered trademarks of E.I. DuPont.

Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

RESPIRATORY PROTECTION
A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release. Exposure levels are not known, on any other circumstance where an air-purifying respirator may not provide adequate protection.


9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
A pale yellow to water-white liquid.

ODORS
Characteristic petroleum hydrocarbon odor.

BASIC PHYSICAL PROPERTIES

PHYSICAL STATE: Liquid
BOILING POINT: 300-550°F
VAPOR PRESSURE: 0.4 mm Hg @ 60°F
VAPOR DENSITY (AIR=1): 0.5
SPECIFIC GRAVITY: (water=1) 0.79 to 0.85
SOLUBILITY (H2O): negligible
PERCENT VOLATILES: 150
EVAPORATION RATE: slow - < 25% in 24 hrs @ 76°F, will vary with conditions
VISCOSITY: 1.0-1.9 CST @ 104°F

Revision Date: 01/04/94
Material Safety Data Sheet

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY):
Material is stable under normal conditions. Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

INCOMPATIBLE MATERIALS:
Keep away from strong oxidizing agents, such as nitric and sulfuric acid, ignition sources and heat.

HAZARDOUS DECOMPOSITION PRODUCTS:
Combustion products, which include carbon monoxide, carbon dioxide and acrid smoke.

HAZARDOUS POLYMERIZATION: Will Not Occur

11. TOXICOLOGICAL INFORMATION

CHRONIC (CANCER) INFORMATION:
Carcinogenicity: NTP: NO OSHA: NO ACGIH: NO

Studies by API and others have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal’s skin with soap and water between applications reduced tumor formation. Potential risks to humans can be minimized by observing good work practices and personal hygiene procedures.

GENETIC (REPRODUCTIVE EFFECTS):
Products of similar composition have been positive in mutagenicity tests.

MICROSOMIC TOXICOLOGICAL INFORMATION:
The naphthalene constituent of the product in its pure form has been demonstrated to cause flatus, headache, ocular effects, neurological effects, gastrointestinal effects, rare hepatocellular injury, blood effects, respiratory and respiratory and intestinal carcinomas in test animals. There is no data that this product as a whole will exhibit the health effect characteristics of naphthalene.

12. ECOLOGICAL INFORMATION

Keep out of sewage, drainage and waterways. Report spills and releases, as applicable, under Federal and state regulations.

13. DISPOSAL CONSIDERATIONS

Maximize product recovery for reuse or recycling. Contaminated materials may be classified as HBC Hazardous Waste due to the low flash point. Empty containers can have residuals that are subject to hazardous waste disposal requirements. Also consult state regulations. Dispose of waste in accordance with all applicable state and federal regulations.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Kerosene

HAZARD CLASS: 3
DOT IDENTIFICATION NUMBER: 329123
DOT SHIPPED LABEL: Flammable Liquid

Revision Date: 01/04/94
14. TRANSPORT INFORMATION - Continued

ADDITIONAL SHIPPING PAPER DESCRIPTION
May be reclassified for transportation as a COMBUSTIBLE LIQUID under conditions of DOT 49 CFR 173.120(b)(17).

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATORY INFORMATION
Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal reporting requirements. Consult those regulations applicable to your facility/operation.

This product and its constituents listed herein are on the EPA TSCA Inventory.

SARA TITLE III NOTIFICATION AND INFORMATION
SARA TITLE III - HAZARD CLASSIFICATION: Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA TITLE III - SECTION 111 SUPPLIERS NOTIFICATION
This product contains the following EPA Toxic Chemicals subject to the reporting requirements of Section 113 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CASE NUMBER: INGREDIENT NAME: PERCENT BY WEIGHT:
91-20-3 2-naphthalenemethanol < 3.0

U.S. STATE REGULATORY INFORMATION
Any spill or uncontrolled release of this product may be subject to state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CANADIAN REGULATORY INFORMATION
The Canadian Workplace Hazardous Materials Information System (WHMIS) classifies this product as Class 3: Combustible Liquid - Class D, Division 2, Subdivision B: Toxic Material.

16. OTHER INFORMATION

NFPA HAZARD RATING - HEALTH: 0 Negligible
- FIRE: 2 Moderate
- REACTIVITY: 0 Negligible

HMIS HAZARD RATING - HEALTH: 2 Moderate
- FIRE: 2 Moderate
- REACTIVITY: 0 Negligible

REVISED CODES DATE: 01/15/89

ACGIH = American Conference of Governmental Industrial Hygienists
AGSI = American National Standards Institute
API = American Petroleum Institute
DOT = U.S. Department of Transportation
EPA = U.S. Environmental Protection Agency
HMIS = Hazardous Materials Information System

Revision Date: 01/04/94
### Material Safety Data Sheet

**KEGGEREN K-1**

#### 16. OTHER INFORMATION - Continued

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC</td>
<td>International Agency For Research On Cancer</td>
</tr>
<tr>
<td>MSDS</td>
<td>Mine Safety and Health Administration</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute of Occupational Safety and Health</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>U.S. Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit (OSHA)</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>REL</td>
<td>Recommended Exposure Limit (NIOSH)</td>
</tr>
<tr>
<td>SCBA</td>
<td>Self-Contained Breathing Apparatus</td>
</tr>
<tr>
<td>SFPC</td>
<td>Spill Prevention, Containment, and Control</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-Term Exposure Limit</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value (ACGIH)</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average (8 hr.)</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Canadian Workplace Hazardous Materials Information System</td>
</tr>
</tbody>
</table>

**DISCLAIMER OF EXpressed AND IMPLIED WARRANTIES**

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendees or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendees or third persons proximately caused by normal use of the material, even if reasonable safety procedures are followed. Furthermore, vendees assume the risk in their use of the material.

Revision Date: 01/04/94