Safety Data Sheet

Material Name: Jet Fuel A and A1

Synonyms: Aviation Kerosene; Aviation Turbine Fuel Jet A; Jet A; Jet A –1; JP – 1; Military Aviation Jet Fuel JP –1

*** Section 1 - Product and Company Identification ***

Manufacturer Information
Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961
Phone: 732-750-6000
Corporate EHS
Emergency # 800-424-9300
CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

*** Section 2 - Hazards Identification ***

GHS Classification:
- Flammable Liquids - Category 3
- Skin Corrosion/Irritation - Category 2
- Eye Damage/Irritation - Category 2A
- Carcinogenicity – Category 1B
- Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3
- Aspiration Hazard - Category 1
- Hazardous to the Aquatic Environment Chronic - Category 2

GHS LABEL ELEMENTS
Symbol(s)

Signal Word
Danger

Hazard Statements
- Flammable liquid and vapor.
- Causes skin irritation.
- Causes serious eye irritation.
- May cause cancer.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.
- May be fatal if swallowed and enters airways.
- Toxic to aquatic life with long lasting effects.

Precautionary Statements
Prevention
- Keep away from heat/sparks/open flames/hot surfaces. No smoking
- Keep container tightly closed.
- Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
IF SWALLOWED: Immediately call a poison center or doctor/physician. Do NOT induce vomiting.
If exposed or concerned: Get medical advice/attention.
In case of fire: Use water spray, fog or fire fighting foam to extinguish.

Storage
Store locked up.
Store in a well-ventilated place. Keep cool.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 3 - Composition / Information on Ingredients ***

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>8008-20-6</td>
<td>Kerosene</td>
<td>100</td>
</tr>
<tr>
<td>91-20-3</td>
<td>Naphthalene</td>
<td>2</td>
</tr>
</tbody>
</table>

A complex combination of hydrocarbons including naphthenes, paraffins, and aromatics.

*** Section 4 - First Aid Measures ***

First Aid: 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.

First Aid: Skin
Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.
**First Aid: Ingestion**

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

**First Aid: Inhalation**

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

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### Section 5 - Fire Fighting Measures

**General Fire Hazards**

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. 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.

**Hazardous Combustion Products**

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

**Extinguishing Media**

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, and other gaseous agents.

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.

**Unsuitable Extinguishing Media**

None

**Fire Fighting Equipment/Instructions**

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing 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.

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### Section 6 - Accidental Release Measures

**Recovery and Neutralization**

Carefully contain and stop the source of the spill, if safe to do so.

**Materials and Methods for Clean-Up**

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.
Emergency Measures
Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment
Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions
Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards
None

*** Section 7 - Handling and Storage ***

Handling Procedures
Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures
Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. 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."

Incompatibilities
Keep away from strong oxidizers.
*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

**Kerosene (8008-20-6)**
- ACGIH: 200 mg/m³ TWA (application restricted to conditions in which there are negligible aerosol exposures, total hydrocarbon vapor)
- Skin - potential significant contribution to overall exposure by the cutaneous route
- NIOSH: 100 mg/m³ TWA

**Naphthalene (91-20-3)**
- ACGIH: 10 ppm TWA
- 15 ppm STEL
- Skin - potential significant contribution to overall exposure by the cutaneous route
- OSHA: 10 ppm TWA; 50 mg/m³ TWA
- NIOSH: 10 ppm TWA; 50 mg/m³ TWA
- 15 ppm STEL; 75 mg/m³ STEL

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

**Personal Protective Equipment: Respiratory**

A NIOSH-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, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

**Personal Protective Equipment: Hands**

Gloves constructed of nitrile, neoprene, or PVC are recommended.

**Personal Protective Equipment: Eyes**

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

**Personal Protective Equipment: Skin and Body**

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. 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.

*** Section 9 - Physical & Chemical Properties ***
Safety Data Sheet

Material Name: Jet Fuel A and A1
SDS No. 0325

Appearance: Pale yellow to water-white.
Physical State: Liquid
Odor: Characteristic petroleum distillate odor
Vapor Pressure: 0.029 psia @ 100 °F (38 °C)
Vapor Density: AP 4.5
Boiling Point: 280 to 572 °F (140 to 300 °C)
Melting Point: ND
Solubility (H2O): Negligible
Specific Gravity: 0.75-0.80
Evaporation Rate: Slow; varies with conditions
VOC: ND
Percent Volatile: 100%
Flash Point: >100 °F (38 °C)
Upper Flammability Limit (UFL): 5.0
Lower Flammability Limit (LFL): 0.7
Burning Rate: ND
Auto ignition: 410°F (210°C)

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability
This is a stable material.

Hazardous Reaction Potential
Will not occur.

Conditions to Avoid
Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products
Keep away from strong oxidizers such as nitric and sulfuric acids.

Hazardous Decomposition Products
Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

*** Section 11 - Toxicological Information ***

Acute Toxicity
A: General Product Information
Harmful if swallowed.

B: Component Analysis - LD50/LC50
Kerosene (8008-20-6)
Inhalation LC50 Rat >5.28 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Naphthalene (91-20-3)
Inhalation LC50 Rat >340 mg/m3 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness
Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness
Contact with eyes may cause mild to moderate irritation.
Potential Health Effects: Ingestion
Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation
Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

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.

Respiratory Organs Sensitization/Skin Sensitization
This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity
This product is not reported to have any mutagenic effects.

Carcinogenicity
A: General Product Information
Dermal carcinogenicity: positive - mice
Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of this finding to human exposure has not been determined.

B: Component Carcinogenicity
Kerosene (8008-20-6)
ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Naphthalene (91-20-3)
ACGIH: A4 - Not Classifiable as a Human Carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity
This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure
This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure
This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard
The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.
*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information
Harmful to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Naphthalene (91-20-3)

<table>
<thead>
<tr>
<th>Test &amp; Species</th>
<th>Conditions</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>5.74-6.44 mg/L [flow-through]</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>1.6 mg/L [flow-through]</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>0.91-2.82 mg/L [static]</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>1.99 mg/L [static]</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Lepomis macrochirus</td>
<td>31.0265 mg/L [static]</td>
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<tr>
<td>72 Hr EC50 Skeletonema costatum</td>
<td>0.4 mg/L</td>
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<tr>
<td>48 Hr LC50 Daphnia magna</td>
<td>2.16 mg/L</td>
<td></td>
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<tr>
<td>48 Hr EC50 Daphnia magna</td>
<td>1.96 mg/L [Flow through]</td>
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</tr>
<tr>
<td>48 Hr EC50 Daphnia magna</td>
<td>1.09 - 3.4 mg/L [Static]</td>
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</tbody>
</table>

Persistence/Degradability
No information available.

Bioaccumulation
No information available.

Mobility in Soil
No information available.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging
Dispose of contents/container in accordance with local/regional/national/international regulations.

*** Section 14 - Transportation Information ***

DOT Information
Shipping Name: Fuel, Aviation, Turbine Engine
UN #: 1863  Hazard Class: 3  Packing Group: III
Regulatory Information

Component Analysis – Inventory
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Naphthalene (91-20-3)
CERCLA: 100 lb final RQ; 45.4 kg final RQ

SARA Section 311/312 – Hazard Classes

<table>
<thead>
<tr>
<th></th>
<th>Acute Health</th>
<th>Chronic Health</th>
<th>Fire</th>
<th>Sudden Release of Pressure</th>
<th>Reactive</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

SARA SECTION 313 - SUPPLIER NOTIFICATION
This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

State Regulations

Component Analysis - State
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
<th>RI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene</td>
<td>8008-20-6</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Component Analysis - WHMIS IDL
No components are listed in the WHMIS IDL.

Additional Regulatory Information

Component Analysis - Inventory
Component | CAS #  | TSCA  | CAN  | EEC  
--- | --- | --- | --- | --- 
Kerosene  | 8008-20-6 | Yes | DSL | EINECS 
Naphthalene  | 91-20-3 | Yes | DSL | EINECS 

*** Section 16 - Other Information ***

**NFPA® Hazard Rating**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
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<tr>
<td>Fire</td>
<td>2</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
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</tbody>
</table>

**HMIS® Hazard Rating**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2* Moderate</td>
</tr>
<tr>
<td>Fire</td>
<td>2 Moderate</td>
</tr>
<tr>
<td>Physical</td>
<td>0 Minimal</td>
</tr>
</tbody>
</table>

*Chronic

**Key/Legend**

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

**Literature References**

None

**Other Information**

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 vendee 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 vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet