

# SAFETY DATA SHEET

## JET A-1



### 1. Identification of Substance or Mixture and of the Supplier

**Product Name** : Aviation Jet Fuel JET A-1 (JETA1)  
**Other Names** : JP-1, Kerosene Turbine Fuel, Aviation Turbine Fuel Superior kerosene oil, Low Sulphur Kerosene oil  
**Recommended Use** : Fuel for aviation turbine engines fitted to aircraft.  
**Suppliers Details** : **Attock Refinery Limited**  
P.O. Refinery, Morgah, Rawalpindi, Pakistan  
Telephone/Fax Number  
Tel: +92-51-5487041  
Fax: +91-51-5487041  
**Emergency Phone Number** : +92-51-5487041

### 2. Hazard Identification

**GHS Classification** : **Flammable Liquids**, Category 3  
**Aspiration Hazard**, Category 1  
**Eye Damage/Irritation**, Category 2B  
**Skin Corrosion/Irritation**, Category 2  
**Hazardous to the Aquatic Environment- Long-term Hazard**, Category 2

**GHS Label Elements & Precautionary Statements**



**Signal Word**  
Danger

**Hazard Statement (s)**

**H226** Flammable liquid and vapor  
**H304** May be fatal if swallowed and enters airways  
**H315** Causes skin irritation  
**H319** Causes eye irritation  
**H350** May cause cancer

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### **Precautionary Statement (s) – Prevention**

- P102** Keep out of reach of children
- P201** Obtain special instructions before use
- P202** Do not handle until all safety precautions have been read and understood
- P210** Keep away from source of ignition, hot surface and open flames. 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.
- P264** Wash contaminated skin thoroughly after handling.
- P273** Avoid release to the environment.
- P280** Wear protective gloves/protective clothing/eye protection/face protection.
- P281** Use personal protective equipment as required

### **Precautionary Statement (s) – Response**

- P301+P310** IF SWALLOWED: Immediately call doctor/ physician.
- P302+P352** IF ON SKIN: Wash with plenty of soap and water
- P303+P361+P353** IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 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.
- P331** 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 foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only for extinction.
- P391** Collect spillage

### **Precautionary Statement (s) – Storage**

- P403+P235** Store in a well-ventilated place. Keep cool.
- P405** Store locked up

### **Precautionary Statement (s) - Disposal**

- P501** Dispose of contents/container to an approved waste disposal plant

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### **3. Composition / Information on Ingredients**

**Chemical Identity** : Complex mixture of hydrocarbons consisting of paraffin's, cycloparaffins, aromatics and olefinic hydrocarbons with carbon numbers predominantly in the C9 to C16 range.

#### **Composition Information**

| Name                 | CAS Number | Percent (%) |
|----------------------|------------|-------------|
| Kerosene (petroleum) | 8008-20-6  | 98-100      |
| Naphthalene          | 91-20-3    | 0-2         |

### **4. First-Aid Measures**

**Inhalation** : If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.

**Ingestion** : Rinse mouth with water. DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

**Skin** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water. Seek medical advice.

**Eye Contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical attention.

### **5. Fire Fighting Measures**

**Hazchem Code** : 3Y

**Suitable Extinguishing Media** : Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam

**Unsuitable Extinguishing Media** : Do not use water in a jet. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

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**Hazards from Combustion Products** : Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide and oxides of nitrogen.

**Specific Hazards during Fire Fighting** : Flammable liquid and vapour. Vapour / air mixture may ignite explosively. Flashback along the vapour trail may occur. Runoff to sewer create fire or explosion hazard.

**Decomposition Temperature** : Not Available

**Precautions in connection with Fire** : Small fires in the beginning stage may typically be extinguished using handheld portable fire extinguishers and other firefighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water.

## **6. Accidental Release Measures**

**Personal Precautions, Protective Equipment and Emergency Procedures** : Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Do not touch or walk through spilt material. Shut off all ignition sources.

**Environmental Precautions** : Do not flush down sewer or drainage systems

**Methods and Materials for Containment and Cleaning up** : Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

## **7. Handling & Storage**

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### Safe Handling

: Avoid contact with skin and eyes. Wear overalls, impervious gloves and safety glasses. Use in designated area with local exhaust ventilation, away from sparks, flames and other ignition source. Use approved flammable liquid storage containers in the work area. Prevent release of vapors and mists into workplace air. Keep containers tightly closed. Take precautionary measures against static discharges.

Do not empty into drains. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet facilities

### Safe Storage Conditions

: Store in a cool, dry, well-ventilated area away from sources of ignition, oxidizing agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use, securely sealed and protected against physical damage.

Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures.

Ensure that storage conditions comply with applicable local and national regulations. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure

### Recommended Material

: For containers, or container linings use mild steel, stainless steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product.

### Unsuitable Materials

: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber, polymethyl methacrylate, polystyrene, polyvinyl chloride (PVC), polyisobutylene.

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### 8. Exposure Control / Personnel Protection

| Component   | CAS No    | Value Type<br>(Form of Exposure) | Control Parameters /<br>Permissible Concentration | Basis           |
|-------------|-----------|----------------------------------|---------------------------------------------------|-----------------|
| Kerosene    | 8008-20-6 | TWA                              | 200 mg/m <sup>3</sup> , 100 mg/m <sup>3</sup>     | ACGIH/<br>NIOSH |
| Naphthalene | 91-20-3   | TWA                              | 10 PPM                                            | ACGIH           |

**Occupational Exposure Limit Values** TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

**Biological Limit Values** : No biological limit available

**Eye Protection** : Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

**Hand Protection** : Wear gloves of impervious material such as nitrile gloves (Breakthrough time of > 240 minutes) neoprene, PVC gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations.

**Body Protection** : Suitable protective work wear, e.g. Cotton overall/dangries.

### 9. Physical & Chemical Properties

**Physical State** : Liquid  
**Flammability** : Flammable  
**Color** : Clear and Bright  
**Odor** : Hydrocarbon (marketable)  
**Boiling Point Range °C** : 140 - 300  
**Specific Gravity @ 15.6°C/ 15.6°C:** : 0.775-0.840

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Mercaptan Sulphur ppm : <30  
 Freezing Point °C : -49  
 Flash Point °C : ≥38

### 10. Stability & Reactivity

**Chemical Stability** : Stable under normal conditions of storage and handling  
**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).

### 11. Toxicological Information

**Toxicology Information** : **Acute Toxicity – Oral**  
 LD50 :( Rat) : >2000 mg/kg

**Acute Toxicity – Inhalation**  
 LD50 :( Rat) : >5 mg/l / 4h

**Acute Toxicity – Dermal**  
 LD50 :( Rat) : >2000 mg/kg

**Ingestion** : May be fatal if swallowed and enters airways. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause severe pulmonary injury that may lead to death. May cause irritation to the mouth, throat, esophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea

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

**Skin** : Causes skin irritation. Skin contact will cause redness, itching and swelling. Repeated exposure may cause skin dryness and cracking

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and may lead to dermatitis

|                                             |   |                                                                                   |
|---------------------------------------------|---|-----------------------------------------------------------------------------------|
| <b>Eye</b>                                  | : | May be irritating to eyes. The symptoms may include redness, itching and tearing. |
| <b>Respiratory Sensitization</b>            | : | Not expected to be a respiratory sensitizer                                       |
| <b>Skin Sensitization</b>                   | : | Not expected to be a skin sensitizer                                              |
| <b>Germ cell Mutagenicity</b>               | : | Not considered to be a mutagenic hazard..                                         |
| <b>Carcinogenicity</b>                      | : | Not considered to be a carcinogenic hazard.                                       |
| <b>Reproductive Toxicity</b>                | : | Not considered to be toxic to reproduction.                                       |
| <b>Aspiration Respiratory Organs Hazard</b> | : | May be fatal if swallowed and enters airways                                      |

## 12. Ecological Information

|                                   |   |                                                                                                                                                                                        |
|-----------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ecotoxicity</b>                | : | Incomplete ecotoxicological data are available for this product. The information given below is based partly on knowledge of the components and the ecotoxicology of similar products. |
| <b>Acute Toxicity</b>             |   |                                                                                                                                                                                        |
| <b>Fish</b>                       | : | Expected to be toxic: $10 < LC/EC/IC50 \leq 100$ mg/l                                                                                                                                  |
| <b>Aquatic Invertebrates</b>      | : | Expected to be toxic: $10 < LC/EC/IC50 \leq 100$ mg/l                                                                                                                                  |
| <b>Algae</b>                      | : | Expected to be toxic: $1 < LC/EC/IC50 \leq 10$ mg/l                                                                                                                                    |
| <b>Microorganisms</b>             | : | Expected to have low toxicity: $LC/EC/IC50 > 1000$ mg/l                                                                                                                                |
| <b>Biodegradability</b>           | : | Oxidizes rapidly by photochemical reactions in air. Expected to be inherently biodegradable                                                                                            |
| <b>Persistence/ Degradability</b> | : |                                                                                                                                                                                        |
| <b>Mobility</b>                   | : | Adsorbs to soil and has low mobility. Floats on water                                                                                                                                  |
| <b>Bioaccumulative Potential</b>  | : | Has the potential to bioaccumulative                                                                                                                                                   |

## 13. Disposal Considerations

Dispose of waste according to applicable local and national regulations. Labels should not be removed



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from containers until they have been cleaned. Advise flammable nature.

Empty containers may contain flammable residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected.

### **14. Transport Information**

**Hazard Class**

3

**U.N. Number**

1863

**Packaging Group**

III

**Label**

Flammable Liquid

### **15. Regulatory Information**

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of chemicals (GHS) including Work, Health and Safety regulations.

### **16. Other Information including Information on Preparation and revision of the SDS**

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 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.