

1. Identification of the substance/mixture and the company/undertaking

Identification of substance: **Jet Fuel**

Synonyms: Jet A1, Kerosine Jet A1, Kerosene Jet A1, Aviation Jet Fuel A-1(civilian), Aviation Turbine Fuel (Avtur), NATO F34, F35 (military), Regular Burning Oil (RBO), 28 Second Heating Oil

Product use: Aviation fuel.

Company identification: Gulf Aviation
Glenbervie Business Park
Tryst House, Larbert FK5 4RB

Email address: aviation@gulfaviation.co.uk

Emergency tel. number: 01642 679461

2. Hazards identification

This product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification according to superseded DSD 67/548/EEC and 1999/45/EC

Risk phrases

- R10 Flammable
R65 Harmful: may cause lung damage if swallowed
R38 Irritating to skin
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Hazard symbols



Classification according to CLP Regulation EC No 1272/2008

<i>Hazard Statement</i>	<i>Category</i>
H226 Flammable liquids	3
H315 Skin corrosion/irritation	2
H315 Specific target organ toxicity (single exposure)	3
H304 Aspiration hazard	1
H411 Hazardous to the aquatic environment (chronic)	2

Hazard symbols



3. Composition / Information on ingredients

Component	CASRN	EINECS	REACH Registration No	Concentration ¹	CLP Classification ²	DSD Classification ³
Hydrodesulfurized kerosene C9-16	64742-81-0	265-184-9	01-2119462828-25	≤100	H304	Xn;R65

¹All concentrations are % by weight

²Regulation EC 1272/2008

³Superseded Directives 67/548/EEC and 1999/45/EC

4. First Aid Measures

Eye contact: if irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist seek medical attention

Skin contact: remove contaminated shoes and clothing, flush affected area(s) with large amounts of water. If skin surface is damaged apply a clean dressing and seek medical attention. If skin surface is not

damaged clean affected area(s) thoroughly by washing with soap and water or waterless hand cleaner. If irritation persists seek medical attention. Wash contaminated clothing before reuse. Clean shoes thoroughly before reuse. When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to hospital. Do not wait for symptoms to develop.

Inhalation: If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist seek medical attention.

Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with head down. If possible do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. Fire-fighting measures

Extinguishing media

Use dry chemical, carbon dioxide, foam or water spray(fog). Do not use water jet

Special exposure hazards arising from the substance or mixture

Flammable liquid. This material can be ignited by heat, sparks, flames or other sources of ignition. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire hazard.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

Combustion may produce smoke, carbon monoxide and other products of incomplete combustion. Nitrogen and sulphur oxides

Special protective actions for firefighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA). Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small Spill: Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large Spill: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

7. Handling and storage

Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Refer to special instructions/safety data sheet. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage, including any compatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Store away from oxidizing agents. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Unsuitable materials: Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills. Concentration of H₂S in tanks can reach hazardous values especially in case of prolonged storage. Before entering storage tanks and commencing any operation in a confined area check the atmosphere for oxygen content and flammability. If sulphur compounds are suspected to be present in the product, check the atmosphere for hydrogen sulphide (H₂S) content. Use adequate personal protection equipment as needed.

8. Exposure controls/personal protection

Workplace Exposure limits:

No workplace exposure limit established in EH40 for this product.

Other exposure information

In the absence of a workplace exposure limit, the following exposure limits taken from EH40 are recommended:

8hr TWA value – 500mg/m³

Exposure controls

The level of personal protection and the types of control necessary will vary depending on exposure conditions. Select controls based on risk assessment of local circumstances. Use sealed systems as far as possible. Use local, intrinsically safe, exhaust ventilation if there is a risk of inhalation of vapours, mists or aerosols. Provide eye washes and showers for emergency use.

Respiratory protection

Care should be taken to keep exposures below applicable occupational exposure limits. If this cannot be achieved, use of a respirator fitted with an organic vapour cartridge combined with a particulate pre-filter should be considered. Where air-filtered respirators are unsuitable (e.g. where airborne concentrations are high, there is a confined space or a risk of oxygen deficiency) use appropriate positive pressure breathing apparatus.

Hand protection

Select gloves tested to a relevant standard (EN374). When prolonged or frequent repeated contact occurs, nitrile, neoprene or PVC gloves may be suitable (Breakthrough time >240mins). Breakthrough time for gloves vary depending on, e.g. chemical resistance, material thickness, frequency and duration of contact. Selection should also take into account other usage requirements e.g. dexterity, heat resistance, other chemical substances handled. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.

Eye protection

Wear safety glasses or full-face shield if splashes are likely to occur.

Body protection

Minimise all forms of skin contact. In the event of risk from splashing wear e.g. nitrile, PVC or neoprene rubber apron. Wear safety shoes or boots that are chemical and petroleum distillate resistant.

Environmental exposure controls

Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

Exposure measurement methods

Monitoring of the concentration of substances in the breathing zones of workers or in the general workplace may be required to confirm compliance with Workplace Exposure Limit and adequacy of exposure controls.

9. Physical and chemical properties

Physical State:	Liquid	Flashpoint:	≥38°C
Appearance:	Clear	Flammable Limits - Upper	6% vol.
Odour:	Kerosene	Flammable Limits - Lower	0.5% vol.
Initial Boiling pt:	~150°C	Auto-ignition temperature:	~220°C
Final boiling pt:	~300°C	Viscosity	1.3 – 2.9mm ² /s @20°C
Solubility in water	Negligible	Vapour Density (Air =1)	> 5
Density	770 to 820kg/m ³ at 15°C	Partition Coefficient, n-octanol water:	N/D

The above are typical values

10. Stability and reactivity

Stability

Stable under normal conditions of use

Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Materials to avoid

Strong oxidising and reducing agents.

Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.

11. Toxicological information

Information on toxicological effects of substance/mixture

<i>Acute toxicity</i>	<i>Hazard</i>	<i>LC50/LD50 Data</i>
Inhalation	Unlikely to be harmful	>5.2mg/L (mist)
Skin Absorption	Unlikely to be harmful	>2g/kg
Ingestion	Unlikely to be harmful	>5g/kg

Aspiration hazard: May be fatal if swallowed and enters airways

Skin corrosion/irritation: Causes skin irritation, repeated exposure may cause skin dryness and cracking

Serious eye damage/irritation: Causes mild eye irritation

Signs and symptoms: while significant vapour concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of co-ordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhoea and vomiting.

Skin sensitisation: not expected to be a skin sensitiser

Respiratory sensitisation: no information available

Specific target organ toxicity (single exposure): may cause drowsiness and dizziness

Specific target organ toxicity (repeated exposure): not expected to cause organ effects from repeated exposure

Carcogenicity: not expected to cause cancer

Germ cell mutagenicity: not expected to cause heritable genetic effects

Reproductive toxicity: not expected to cause reproductive toxicity

12. Ecological information

Toxicity

Kerosenes should be regarded as toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

The hydrocarbons in kerosenes are not readily biodegradable but are regarded as inherently biodegradable since their hydrocarbon components can be degraded by microorganisms.

Bioaccumulative potential

The hydrocarbons in kerosenes would be regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bio-concentration.

Mobility in soil and environmental fate

The hydrocarbons in kerosenes are a mixture of volatile components which when released to air will react rapidly with hydroxyl radicals and ozone.

If released to water, the majority of hydrocarbons will evaporate at a moderate rate but a small proportion will dissolve. Dissolved components will be either absorbed in sediments or evaporate to air. In aerobic water and sediments they will biodegrade, but in anaerobic conditions they will persist. Contains components which have a high potential to bioaccumulate, but is unlikely to persist in the aquatic environment for sufficient time to pose significant hazards.

Small volumes released on land will evaporate at a moderate rate, with a proportion of the product being absorbed in the upper soil layers and being subject to biodegradation. Larger volumes may penetrate into anaerobic layers in which the product will persist. The product may reach the water table on which it will form a floating layer and move along with the groundwater flow. In this case the more soluble components, such as aromatics, will cause groundwater contamination.

Other adverse effects

None anticipated

13. Disposal considerations

Waste treatment methods

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

European Waste Code: 13 07 03* other fuels (including mixtures). Classified as Hazardous Waste

14. Transport information

UN Number:	1863	Hazchem Code:	3Y
Proper Shipping Name:	FUEL AVIATION, TURBINE ENGINE	Class:	3
Symbols:	Flammable Liquid	Packing Group	III
	Environmentally Hazardous	Tunnel code	D/E

Marine Pollutant, MARPOL rules apply for bulk shipments by sea

15. Regulatory information

Classification and labelling according to Regulation (EC) 1907/2006 (REACH)

Symbols



Classification: Flammable
 Harmful
 Dangerous for the environment

Risk Phrases:

- R10 Flammable
- R38 Irritating to skin
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- R65 Harmful: may cause lung damage if swallowed

Safety Phrases:

- S2 Keep out of the reach of children
- S23 Do not breathe vapour
- S24 Avoid contact with skin
- S29 Do not empty into drains
- S36/37 Wear suitable protective clothing and gloves
- S43 In case of fire use foam/dry powder/AFFF/carbon dioxide – NEVER USE WATER
- S61 Avoid release to the environment. Refer to special instructions / safety data sheets
- S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this label or container

Classification and labelling according to CLP Regulation EC No 1272/2008

Hazard symbols



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H226 Flammable liquids	3
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H411 Hazardous to the aquatic environment (chronic)	2

Precautionary Statement

- P102 Keep out of reach of children
- P210 Keep away from heat/sparks/open flames/hot surfaces – No Smoking
- P280 Wear protective gloves / protective clothing / eye protection / face protection
- P301/310 IF SWALLOWED: immediately call a POISON CENTER or doctor physician
- P331 Do NOT induce vomiting
- P501 Dispose of contents/container to approved disposal facility

Chemical safety assessment

A chemical safety assessment has been carried out for this substance/mixture

16. Other information

This safety data sheet contains important information to ensure the safe storage, handling and use of this substance/mixture, it does not however constitute an assessment of workplace risks.

Users are advised to refer to relevant legislation, approved codes of practice and guidance available from the Health & Safety Executive (*website: <http://www.hse.gov.uk>*) and to the IP Codes of Practice available from the Energy Institute (*website: <http://www.energyinst.org.uk>*)

Further information

The above information is based on our current knowledge of the product. The purpose of this data sheet is to describe the product in terms of its safety and environmental requirements. It is the user's responsibility to satisfy themselves as to the application of this information and/or recommendations for their own use.