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SAFETY DATA SHEET

This SDS is compiled in accordance with the GHS

1. IDENTIFICATION

Product Name: Jet A1
Synonyms: F-34, AVTUR, FSII to AVTUR F-34
CAS Number: 68334-30-5
Product Use: Fuel
Supplier: IOR Petroleum Pty Ltd
Address: 99 Southgate Avenue, Cannon Hill, Queensland, Australia 4170

General Information: +61 7 3895 4444
Emergency Contact: 000 (Australia Only)
Poisons Information Centre: 13 11 26
Recommended use of the chemical and restrictions on use: Fuel for aviation turbine engines fitted to aircraft.

2. HAZARDS IDENTIFICATION

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

GHS Classification:

Physical Hazard(s)	Flammable Liquid Category 3
Health Hazard(s)	Acute Toxicity Category 4 –Inhalation Skin Irritant Category 2 Aspiration Toxicity Category 1
Environment Hazard(s)	Aquatic Toxicity Chronic 2

GHS Label Elements	
Signal Word	**DANGER**

Hazard Statement(s)

H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statement(s): Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. 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.

Precautionary Statement(s): Response

P301+P310	IF SWALLOWED: Immediately call a POISONS CENTRE on **13 11 26** or doctor/physician
P331	Do NOT induce vomiting
P332+P313	If skin irritation occurs: Get medical advice/attention.
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.
P362	Take off all contaminated clothing and wash before reuse
P391	Collect spillage.

Precautionary Statement(s): Storage

P403+P235	Store in w ell ventilated place. Keep cool.
P405	Store locked up.

Precautionary Statement(s): Disposal

P501	Dispose of contents/container to an approved disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	***CAS Number***	***Volume %***
Kerosine (petroleum), hydrodesulpherised	64742-81-0	100
Kerosine	8008-20-6	100

Diethylene glycol mnomethyl ether	111-77-3	0.15

4. FIRST AID MEASURES

Eye: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

Skin: Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

Inhalation: If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

Ingestion: Do NOT induce vomiting. Wash out mouth and lips with water. Where vomiting occurs naturally have affected person place head below hip level in order to reduce risk of aspiration. Seek immediate medical attention.

First Aid Facilities: Eyewash, safety shower and normal washroom facilities.

Advice to Physician: Treat symptomatically.

Other Information: For advice in an emergency, contact a Poisons Information Centre or a doctor at once. (131 126)

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Foam, Dry chemical, CO_2, and water fog. Sand or earth may be used for small fires only.

Unsuitable Extinguishing Media: Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Fire Fighting Procedures: Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop leak. Water spray may be used to flush spills away from exposures. Prevent runoff from fire control or dilution from entering waterways, sewers or drinking water supply. For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

Hazards from Combustion Products: Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including a complex mixture of airborne solid and liquid particulates and gases (smoke), carbon monoxide, carbon dioxide, unidentified organic and inorganic compounds.

Specific Hazards Arising from the Chemical: Extremely flammable liquid and vapour. Keep containers and fire-exposed surfaces cool with water spray. Shut off any leak if safe to do so and remove sources of re-ignition. Vapour/air mixtures may ignite explosively. Flashback along the vapour trail may occur. Runoff to sewer may create fire or explosion hazard.

Precautions in Connection with Fire: Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. In case of fire the product may be violently or explosively reactive. Use water spray to disperse vapours. This product should be prevented from entering drains and watercourses.

HAZCHEM Code: 3Y

Decomposition Temperature: N/A

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible, contain the spill. Place inert absorbent, non-combustible material onto spillage. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with skin and eyes. Wear overalls, impervious gloves and safety glasses. Use in designated areas with local exhaust ventilation, away from sparks, flames and other ignition sources. Use approved flammable liquid storage containers in the work area. Prevent release of vapours 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.

Conditions for safe storage, including any incompatibilities: Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising 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. For information on the design of the

storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids.

Recommended Materials: For containers, or container linings use carbon steel and low alloy steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. For container linings the following may also be used: Unplastisized polyvinyl chloride (U-PVC), Fluoropolymers (PTFE), Polyvinylidenefluoride (PVDF), Polyetheretherketone (PEEK), Polyamide (PA-11). For seals and gaskets use: Fluoroelastomer (FKM), Viton A, and Viton B, Nitrile butadiene (NBR), Buna-N. For coating (paint) materials use: High build, amine adduct-cured epoxy.

Unsuitable Materials: For containers or container linings, examples of materials to avoid are: Polyethylene (PE, HDPE), Polypropylene (PP), Polymethyl methacrylate (PMMA), Acrylonnitrile butadiene styrene (ABS). For seals and gaskets, examples of materials to avoid are: Natural rubber (NR), Ethylene Propylene (EPDM, Polychloroprene (CR) - Neoprene, Butyl (IIR), Chlorosulphonated polyethylene (CSM), e.g. Hypalon.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	*CAS Number*	*TWA (mg/m³)*
Kerosine	8008-20-6	200

Biological Limit Values: No biological limits allocated.

Appropriate Engineering Controls: This substance is hazardous and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. A flame-proof exhaust ventilation system is required. If the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn. Refer to relevant regulations for further information concerning ventilation requirements. Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1:2009 Explosive atmospheres - Classification of areas - Explosive gas atmospheres, for further information concerning ventilation requirements.

Respiratory Protection: If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

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. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection: Wear gloves of impervious material such as nitrile gloves (Breakthrough time of > 240 minutes) neoprene, PVC gloves may be suitable. 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. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection: Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Colour	Pale straw
Odour	Hydrocarbon
Density	0.775 - 0.84 g/cm³ at 15 °C
Boiling Point (95%)	150 - 300 °C
Vapour Pressure	< 0.1 hPa at 20 °C
Flash Point (FP)	38 - 55 °C
Flammability	Flammable
Auto-Ignition Temperature	>220 °C
LEL	1%
UEL	6%
Solubility in Water	Negligible.

10. STABILITY AND REACTIVITY

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

Reactivity and Stability: Reacts with incompatible materials.

Conditions to Avoid: Avoid heat, sparks, open flames and other ignition sources.

Incompatible materials: Strong oxidising agents.

Hazardous Decomposition: Products Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

Possibility of hazardous reactions: N/A

Hazardous Polymerization: N/A

11. TOXICOLOGICAL INFORMATION

Toxicology Information: The available toxicity data for material given below.

Acute Toxicity – Oral: LD50:(rat): >2000 mg/kg

Acute Toxicity - Inhalation: LD50:(rat): >5 mg/l / 4 h, Rat High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
Acute Toxicity - Dermal LD50:(rabbit): >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, oesophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea.

Inhalation: Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

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

Eye: May be irritating to eyes. The symptoms may include redness, itching and tearing.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic life with long lasting effects.

Persistence and degradability: Major constituents are expected to be inherently biodegradable. The volatile constituents will oxidize rapidly by photochemical reactions in air.

Mobility: Floats on water. Contains volatile constituents. Evaporates within a day from water or soil surfaces. Large volumes may penetrate soil and could contaminate groundwater.

Bioaccumulative Potential: Contains constituents with the potential to bioaccumulate.

Other Adverse Effects: Films formed on water may affect oxygen transfer and damage organisms.

Environmental Protection: Do not discharge this material into waterways, drains and sewers.

Acute Toxicity - Other Organisms: LL/EL/IL50:(aquatic organisms): 1-10 mg/l

13. DISPOSAL CONSIDERATIONS

Disposal considerations: Dispose of waste according to applicable local and national regulations. Labels should not be removed from containers until they have been cleaned. Advise flammable nature. Empty containers may contain flammable residues. Do not puncture, cut or weld on or near empty containers. 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

UN Number	1863
UN Proper Shipping Name	FUEL, Aviation, Turbine Engine
Transport Hazard Class	Class 3 Flammable Liquid according to The Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)
Packing Group	III
Hazchem Code	3Y
Marine Pollutant	Yes

15. REGULATORY INFORMATION

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

SUSMP Schedule : S5. When packed in containers having a capacity of 20 litres or less.

SUSMP Schedule Not scheduled when packed in containers having capacity of greater than 20 litres.

Poisons Schedule: S5

16. OTHER INFORMATION

Compiled by:

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