

Date of issue: 14 July 2025
SDS Version No: 3

Safety Data Sheet Jet A-1

Classified as: Hazardous according to the EPA Hazardous Substances
(Hazard Classifications) Notice 2020.

Section 1: SUBSTANCE AND SUPPLIER DETAILS

Product Name: Jet A-1

Other Names: F-35, Avtur, Aviation Turbine Fuel

Supplier: Z Energy Limited
3 Queens Wharf
Wellington
New Zealand

Phone: +64 4 472 0080

Local Contact: Phone – 0800 474 355
Email – general@z.co.nz

Recommended Use: Fuel for turbine engines fitted to aircraft.

Use Restriction: None.

In Case of Emergency Contact:

CHEMCALL: 0800 CHEMCALL (243 622) 24 hours
International - +64 4 917 9888

Section 2: HAZARDS IDENTIFICATION

This product is classified as a Dangerous Good for Transport.

This product is classified as hazardous according to criteria in the EPA Hazardous Substances (Hazard Classifications) Notice 2020.

HSNO APPROVAL NUMBER: **HSR001049**

HSNO CLASSIFICATIONS: 3.1C – Flammable liquid
6.1E – Aspiration hazard
9.1B – Ecotoxic in the aquatic environment, chronic

GHS Classification: Flammable liquid – Category 3
Aspiration hazard – Category 1
Hazardous to the aquatic environment, chronic – Category 2

Labelling Elements:

Hazard Statements:

H226 Flammable liquid and vapour.

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H304 May be fatal if swallowed and enters airways.

H411 Toxic to aquatic life with long lasting effects.

GHS Pictograms:



Signal Word: **DANGER**

PREVENTION STATEMENTS:

P102 – Keep out of reach of children.

P103 – Read carefully and follow all instructions.

P210 – Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.

P233 – Keep container tightly closed.

P240 – Ground and bond container and receiving equipment.

P241 – Use explosion-proof ventilating/electrical/lighting equipment.

P242 – Use non-sparking tools.

P243 – Take action to prevent static discharges.

P273 – Avoid release to the environment.

P280 – Wear protective gloves, protective clothing, eye protection, face protection.

RESPONSE STATEMENTS:

P101 - If medical advice is needed, have product container or label at hand.

P301 + P331 + P310 – IF SWALLOWED: Do NOT induce vomiting. Immediately call a POISON CENTRE or doctor.

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P370 + P378 - In case of fire: Use water spray, dry powder, foam, or carbon dioxide to extinguish.

P391 – Collect spillage.

STORAGE:

P403 + P235 – Store in a well-ventilated place. Keep cool.

P405 – Store locked up.

DISPOSAL:

P501 - In accordance with the EPA Hazardous Substances (Disposal) Notice 2017. Dispose of via an approved waste disposal contractor. Refer to Section 13 of the SDS.

Other information: This product is intended for use as a fuel in a closed system. If used for any other purpose, risks will increase, and a full risk assessment should be carried out.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixture: A complex combination of hydrocarbons consisting primarily of hydrocarbons having carbon numbers predominantly in the range C9 to C16 and boiling in the range of 140°C to 300°C. May also contain several additives at <0.1% v/v each. Total aromatic hydrocarbons present are typically in the range of 10-20%v/v.

Main Component	CAS Number	Concentration (%wt)
Kerosine (petroleum)	8008-20-6	>90 %
Naphthalene	91-20-3	<3 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4: FIRST AID MEASURES

Workplace Facilities Required:	Eye wash and safety shower facilities should be provided in workplaces where there is a risk of significant exposure.
If Inhaled:	Remove to fresh air and keep at rest. Seek medical attention if symptoms persist.
In Contact with Eye:	Hold eyes open, flush continuously with water for at least 15 minutes. Seek medical attention if irritation develops and persists.
In Contact with Skin:	Wash skin with soap and plenty of water, while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Seek medical attention if skin irritation develops and persists.
If Swallowed:	DO NOT INDUCE VOMITING. Rinse mouth. Never give anything by mouth to an unconscious person. If unconscious, seek immediate medical attention. If vomiting occurs, keep head below hips to prevent aspiration to lungs.
Advice to Doctor:	Treat symptomatically. Aspiration of product into lungs following vomiting may cause fatal pulmonary oedema.

Section 5: FIRE FIGHTING MEASURES

Fire/Explosion Hazard:	Flammable liquid and vapour. Liquid can ignite leading to a flash fire, or an explosion in a confined space. May ignite on surfaces at temperatures above auto-ignition temperature. Keep away from hot surfaces, heat, sparks, and ignition sources. Hazchem Code: 3Y.
Suitable Extinguishing Media:	Use water spray or fog, carbon dioxide, dry powder, or foam. Sand or earth may be used on small fires. Do not use water jet.
Precautions in Connection with Fire:	The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and may be reignited on surface water. Flammable vapours may be present even at temperatures below the flash point. Combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.
Advice for firefighters:	Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses. Keep adjacent containers cool by spraying with water from a safe location. If possible, remove them from the danger zone. If adequate cooling cannot be achieved, the area needs to be evacuated, and further firefighting and cooling attempts should be carried out from a safe location.

Section 6: ACCIDENTAL RELEASE MEASURES

An emergency response plan meeting the requirements of Part 5 of the Health and Safety at Work (Hazardous Substances) Regulations 2017 is required when held in quantities greater than 1,000L.

Precautions:	<p>Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.</p> <p>Clear area of all unprotected personnel. Keep unnecessary and unprotected personnel from entering area. Do not breathe fumes/vapour. Avoid contact with skin and eyes. Remove any readily combustible materials and all sources of ignition. Ventilate area. Do not release to the environment. If spill enters waterways, contact local council pollution hotline.</p>
Suitable Protective Equipment:	<p>Emergency responders must use personal protective equipment, including gloves, PVC jacket and trousers, knee length, chemical resistant safety boots, and safety glasses with side shields or safety goggles. Respiratory protection may be required if large amounts of vapour/fumes is present. Contaminated clothing may be a fire hazard and therefore should be soaked with water before being removed.</p>
Spill or Leak Procedures.	<p>Stop leak if safe to do so. Contain and absorb spill using inert, non-combustible, absorbent material such as sand, earth. Collect using clean, non-sparking tools and place in a waste container for disposal. Ensure waste container is properly labelled. Allow residues to evaporate or soak up with appropriate absorbent material. Do not wash residues away with water. Do not dispose into an interceptor.</p> <p>Maritime Spillages: Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.</p>
Waste Disposal Methods:	<p>Dispose of as per Section 13.</p>
Emergency preparation:	<p>Ensure there is appropriate and adequate personal protective equipment, trained personnel and clean up materials for management of accidental release.</p>

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling:	<p>Avoid naked flames, hot surfaces, heat, and ignition sources. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Avoid contact with skin and eyes. Do not breathe vapour/fumes. Use local exhaust ventilation if there is risk of inhalation of vapours, mists, or aerosols. Do not eat, drink, or smoke when using this product. When handling product in drums, safety footwear should be worn, and proper handling equipment should be used. If using pressurised equipment, take extra care to avoid injection under the skin. Only use in well-ventilated areas. Take precautionary measures against static discharges. Ensure all equipment is properly bonded. Cloth, paper, and other materials that are used to absorb spills present a fire hazard. Avoid their accumulation by disposing of them safely and immediately. Remove contaminated clothing and wash hands and face before entering eating areas.</p>
Product Transfer:	<p>Electrostatic charges may be generated during pumping. Ensure electrical continuity by bonding all equipment. Avoid splash filling. Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before</p>

opening hatches or manholes. When filling tanks there is always a danger of static discharge leading to explosion. This is particularly hazardous when switch loading tanks.

Product transfer may give rise to light hydrocarbon vapour in the headspace of tanks. This vapour may explode if there is a source of ignition such as static discharge.

Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care. Conditions, such as filling empty Filter Water Separator vessels, that lead to the formation of hydrocarbon mists are also particularly hazardous.

Storage: Keep out of reach of children. Store locked up. This product must never be stored in buildings occupied by people. Drums and small containers should be stored in well-ventilated areas, flameproof cabinets, or stores. Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition.

Keep in a bunded area with a sealed (low permeability) floor, to provide containment against spillage. Stack drums to a height not exceeding 3 metres without the use of racking. Locate tanks away from heat and other sources of ignition. Seek specialist advice for the design, construction, and operation of bulk storage facilities.

In the interests of air safety, aviation fuels are subject to strict quality requirements and product integrity is of paramount importance. Precautions should be taken to avoid water coming into contact with aviation fuels.

Site Storage Requirements: Site Signage will be required when quantities exceed 1,000L. For incompatibilities refer to Section 10.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Workplace Exposure Standards NZ: Workplace Exposure Standards have not been established for this product but have been established for the following ingredient:

Naphthalene (carc.): TWA 0.5 ppm, 2.6 mg/m³, STEL 2 ppm, 10 mg/m³

Engineering Controls: Eyewash facilities and safety showers should be provided in the work area where there is a risk of exposure to eyes and skin. If use generates large quantities of vapour/fumes, use engineering controls such as local exhaust ventilation to ensure workers are not exposed to levels exceeding the exposure standards.

Personal Protective Equipment: Avoid contact with skin and eyes. Avoid breathing vapour/fumes.

Hand protection: Wear protective gloves that are resistant to the product, e.g., neoprene rubber, nitrile. Refer to Australian and New Zealand Standard AS/NZS 2161 for protective gloves.

Skin and body protection: Wear protective clothing such as cotton overalls buttoned and neck and wrist. When handling large quantities, a chemical resistant apron is recommended. Refer to Australian and New Zealand Standard AS/NZS 4501 for occupational protective clothing.

Eye protection: Use safety glasses with side shields or safety goggles to protect eyes. A face shield may also be used with safety glasses to prevent splashes to face. Refer to

AS/NZS 1336 and 1337 for suitable eye and face protection.

Respiratory protection: Where there is inadequate ventilation and use results in exposure to vapour/fumes, use a respirator with a replaceable organic vapour filter. Refer to AS/NZS 1715 and AS/NZS 1716 for suitable respiratory protection.

Other information: PPE selected must be impervious to the substance. Do not eat, smoke, or drink where material is handled, processed, or stored. Wash hands carefully before eating, drinking, or smoking. Handle in accordance with safe industrial hygiene practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Description:	Liquid	Colour:	Colourless to pale straw
Odour:	Characteristic	Odour Threshold:	Not available
pH (20°C):	Not applicable	Solubility (water, 20°C):	Negligible
Freezing/Melting point:	-47°C	Boiling Point & Range:	150°C – 300°C
Flammability:	Flammable liquid and vapour	Flash Point:	38°C
LEL/UEL:	1 – 6% v/v	Vapour Pressure (20°C):	<0.1 kPa
Decomposition Temp:	Not available	Autoignition Temp:	>220°C
Density (15°C):	775 – 840 kg/m ³	Vapour Density:	>5 (air = 1)
Partition Coefficient: n-octanol/water	Log Pow: 2-6	Viscosity (kinematic):	1-2 mm ² /s at 40°C
Particle Characteristics:	Not applicable		

Section 10: STABILITY AND REACTIVITY

Stability:	Stable under normal cool, dry storage conditions.
Reactivity:	Not reactive under normal conditions of storage and use.
Conditions to Avoid:	Heat, hot surfaces, ignition sources, sparks, flames.
Incompatibility:	Keep away from oxidising agents and combustible materials such as paper, cardboard, wood.
Hazardous Decomposition:	Thermal decomposition may release toxic fumes containing oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

Acute Exposure

Acute Toxicity:	Not classified as acutely toxic. LD ₅₀ oral > 2,000 mg/kg. LD ₅₀ dermal > 2,000 mg/kg LC ₅₀ inhalation > 20 mg/L (vapour)
Inhalation:	Inhalation of vapours may cause a temporary burning sensation to the nose and throat, coughing, and/or difficulty breathing. Large quantities of vapour will displace oxygen and may cause drowsiness, dizziness.

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Ingestion:	Ingestion of large quantities may cause nausea, vomiting, stomach pain, drowsiness, and dizziness. If vomiting occurs and is aspirated into lungs this may be fatal.
Skin Corrosion/Irritation:	Product is not classified as a skin irritant or corrosive. Prolonged or repeated skin contact may cause defatting of the skin and dermatitis.
Serious Eye Damage/Eye Irritation:	Product is not classified as an eye irritant or corrosive. Contact with eyes may cause redness, stinging, weeping.
Respiratory or Skin Sensitisation:	Product is not expected to be a contact or respiratory sensitiser.

Chronic Exposure:

Mutagen/Carcinogen/Reproductive Toxicant	Product is not expected to be mutagenic, carcinogenic, or a reproductive or developmental toxicant.
Specific Target Organ Toxicity Single Exposure:	No information available. Not expected to be a specific target organ toxicant by single exposure.
Specific Target Organ Toxicity Repeated Exposure:	No information available. Not expected to be a specific target organ toxicant by repeated exposure.
Aspiration Hazard:	Product is classified as an aspiration hazard and may cause fatal pulmonary oedema if aspirated into lungs.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:	LC ₅₀ >1 - ≤ 10 mg/L in the aquatic environment. Product is ecotoxic in the aquatic environment with long-lasting effects. Avoid losses to the environment.
Persistence/degradability:	Expected to be biodegradable. Volatile components oxidise rapidly in air by photochemical reaction.
Bioaccumulation:	Contains components with the potential to bioaccumulate.
Mobility in soil:	Adsorbs to soil and has low mobility. Product floats on water.
Other adverse effects:	None.
Ingredients with Ecotoxic classifications:	Jet A-1 has been classified as toxic to the aquatic environment with long lasting, chronic, effects based on knowledge of the components in the product and the ecotoxicity of similar products.

Section 13: DISPOSAL CONSIDERATIONS

Disposal:	Recycle and reuse wherever possible. Do not dispose into the environment, in drains or in water courses. Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination. Dispose of waste product via an approved waste disposal contractor.
Disposal of Packaging:	Labels should not be removed from containers until they have been cleaned. Do not cut, puncture, or weld on or near containers. Empty containers may contain hazardous combustible residues. Contaminated containers must not be treated as

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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. Advise flammable nature. Dispose of packaging via an approved waste disposal contractor.

Section 14: TRANSPORT INFORMATION

This product is classified as a Dangerous Good for transport in accordance with NZS5433:2020, IMDG or IATA.



NZS5433:2020
UN No: 1863
Proper Shipping Name: Fuel, Aviation, Turbine Engine
Class: 3
Packing Group: III
Environmentally hazardous: Yes
Hazchem Code: 3Y

IMDG:
UN No: 1863
Proper Shipping Name: Fuel, Aviation, Turbine Engine
Class: 3
Packing Group: III
Marine Pollutant: Yes
EmS: F-E, S-E

IATA:
UN No: 1863
Proper Shipping Name: Fuel, Aviation, Turbine Engine
Class: 3
Packing Group: III
Environmentally hazardous: Yes

Ensure transportation methods prevent leakage from packages and collapsing loads.

Section 15: REGULATORY INFORMATION

HSNO Approval Code: HSR001049

NZ Inventory of Chemicals: All ingredients are listed in the NZ Inventory of Chemicals (NZIoC).

Australian Inventory of Chemical Substances: All ingredients are listed on the Australian Inventory of Chemical Substances (AICS).

This substance triggers: Compliance Certificate 500L in containers >5L, 1,500L in

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Certified Handler	containers up to 5L
Emergency Response Plan	N/A
Secondary Containment	1,000L
Signage	1,000L

This product will require 2 fire extinguishers to be available where quantities of 500L or more are stored at a location, with the exception of an unattended dispensing station for self-service refueling.

This substance is not required to be Tracked. All workplace personnel handling this substance are required to be trained on the safe handling and PPE requirements for the hazards associated with this substance.

Section 16: OTHER INFORMATION

The information provided in this Safety Data Sheet relates only to the specific material designated herein. This Safety Data Sheet summarises our best knowledge of the health and safety hazard information of the product and how to safely handle the product in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including its use in conjunction with other products.

This substance is approved under HSNO as Jet A-1 fuel for aviation turbine engines. All reasonable care has been taken to ensure that the information and advice contained herein are from sources believed to be reliable and to represent the most up-to-date knowledge available at the date given in Section 16. No liability is assumed for any damages related to the use or misuse of this substance.

All chemical materials may present unknown hazards as people have varying degrees of sensitivity to chemicals. Therefore, this product should be used with caution. The information herein is given in good faith, but no warranty, express or implied is made.

SDS Issued: 14 July 2025

Supersedes: 1 September 2020

Reason for Revision: Update to GHS classifications.
Revised by: Simonne Moses - HSNO Consultant

References:

EPA NZ Approved Hazardous Substances with Controls Database.
Original SDS: Z Energy Limited, Jet A-1 SDS, September 2020.

Summary of Abbreviations: EPA – Environmental Protection Authority
GHS – Global Harmonisation System
CAS – Chemical Abstracts Service
TWA – Time Weighted Average
STEL – Short Term Exposure Limit

END OF SAFETY DATA SHEET