Material Safety Data Sheet

1 . Identification of the material and supplier

Product name	**Avcat**
SDS no.	SAV2110.
Product use	Jet fuel, do not use for other purposes. For specific application advice see appropriate Technical Data Sheet or consult our company representative. Aviation Turbine Fuel conforming to DEF (AUST) 5240D
Synonyms	F-44, JP 5
Supplier	BP Australia Pty Ltd (ABN 53 004 085 616) 717 Bourke Street Docklands VIC 3008 Australia Tel: +61 3 9268 4111 Fax: +61 3 9268 3321
EMERGENCY TELEPHONE NUMBER	1800 638 556 (24 hour)
Product code	SAV2110.

2 . Hazards identification

Statement of hazardous/dangerous nature	HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.
Risk phrases	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.
Safety phrases	S2- Keep out of the reach of children. S23- Do not breathe fumes/vapour/spray. S24- Avoid contact with skin. S43- In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray. Never use water. S61- Avoid release to the environment. Refer to special instructions/safety data sheet. S62- If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

3 . Composition/information on ingredients

A mixture of kerosine streams. May also contain small quantities of proprietary performance additives. Contains small amounts of diethyleneglycol monomethyl ether (DEGME, 2-(2-methoxyethoxy)ethanol) as a fuel icing inhibitor.

Ingredient name	CAS no.	%
Kerosine (petroleum), hydrodesulfurised	64742-81-0	0 - 100
Straight run kerosine	8008-20-6	0 - 100

4 . First-aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin contact	Immediately wash exposed skin with soap and water. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Remove contaminated clothing and shoes. Wash contaminated skin with soap and water. Wash contaminated clothing before reuse. Get medical attention if irritation occurs.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms appear.
Ingestion	If swallowed, do not induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention.

Advice to doctor	Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

5 . Fire-fighting measures

Extinguishing media	
Suitable	In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray. 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.
Not suitable	Do not use water jet.
Hazardous decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Unusual fire/explosion hazards	Flammable liquid and vapour. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
Special fire-fighting procedures	None identified.
Protection of fire-fighters	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

6 . Accidental release measures

Personal precautions	Immediately contact emergency personnel. 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
Environmental precautions	Storage tanks must be positioned within a bunded area. Avoid contact of spilt material with soil and prevent runoff entering surface waterways. 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.
Large spill	Eliminate all ignition sources. 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 (see section 13). 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. Note: see section 1 for emergency contact information and section 13 for waste disposal.
Small spill	Eliminate all ignition sources. 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.

7 . Handling and storage

Handling	Avoid breathing vapours, spray or mists. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Avoid contact of spilt material and runoff with soil and surface waterways. Wash thoroughly after handling. Never siphon by mouth. When using do not eat, drink or smoke.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Store and use only in equipment/containers designed for use with this product. Do not remove warning labels from containers. Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Entry to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapour concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume. Always have sufficient people standing by outside the tank with appropriate breathing apparatus and equipment to effect a quick rescue. 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. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard.
Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Combustibility Classification Combustible liquid Class C1 (AS 1940).

Additional information-Storage This product must be handled in compliance with Australian Standard: The storage and handling of flammable and combustible liquids [Standard 1940-2004 as amended and adapted].

8 . Exposure controls/personal protection

Ingredient name	Occupational exposure limits
Straight run kerosine	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s). Issued/Revised: 1/2003
Kerosine (petroleum), hydrodesulfurised	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s). Form: Vapour

For information and guidance, the ACGIH values are included. For further information on these please consult your supplier.

Biological Limit Values No biological limit allocated.

Exposure controls

Occupational exposure controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits. All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.
The above information is provided to assist the customer in conducting its own assessment of risk to the health and safety of workers for the substance or preparation, and protection of the environment.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection Use only with adequate ventilation. Avoid breathing of vapours, mists or spray. Select and use respirators in accordance with AS/NZS 1715/1716. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure level.

Skin and body Avoid contact with skin and clothing. Wear clothing and footwear that cannot be penetrated by chemicals or oil.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Hand protection Wear chemical resistant gloves. Recommended: Nitrile gloves. Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis.

Eye protection Chemical splash goggles.

9 . Physical and chemical properties

Physical state Liquid.

Colour Clear

Odour Hydrocarbon.

Flash point >61.5 °C (Closed cup) Pensky-Martens.

Explosive properties Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Vapour pressure Not available.

Vapour density Not available.

Viscosity Kinematic: 1 to 8.5 mm^2/s (1 to 8.5 cSt) at -20°C

pH Not available.

Boiling point / range 140 to 300°C (284 to 572°F)

Melting point / range <-46°C (<-50.8°F)

Relative density/Specific gravity Not available.

Density 788 to 845 kg/m^3 (0.788 to 0.845 g/cm^3) at 15°C

Solubility Very slightly soluble in water.

Partition coefficient (LogKow)	>3

10 . Stability and reactivity

Stability	The product is stable.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Avoid excessive heat. Take precautionary measures against static discharges.
Incompatibility with various substances/Hazardous Reactions	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide

11 . Toxicological information

Effects and symptoms

Eyes	Unlikely to cause more than transient stinging or redness if accidental eye contact occurs. May cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.
Skin	Causes skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
Inhalation	May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract. Inhalation of vapour, mist or fume may cause a sore throat, coughing and shortness of breath.
Ingestion	If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting and diarrhoea. Aspiration of this product into the lungs may cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Chronic toxicity

Carcinogenic effects	No component of this product at levels greater than or equal to 0.1% is identified as a carcinogen by ACGIH, the International Agency for Research on Cancer (IARC), the European Commission (EC), or the National Occupational Health and Safety Commission (Australia).
Mutagenic effects	No known significant effects or critical hazards.
Other information	From skin-painting studies of petroleum distillates of similar composition and distillate range, it has been shown that these types of materials often possess weak carcinogenic activity in laboratory animals. In these tests, the material is painted on the shaved backs of mice twice a week for their lifetime. The material is not washed off between applications. Therefore, there may be a potential risk of skin cancer from prolonged or repeated skin contact with this product in the absence of good personal hygiene. This particular product has not been tested for carcinogenic activity, but we have chosen to be cautious in light of the findings with other distillate streams. Occasional skin contact with this product is not expected to have serious effects, but good personal hygiene should be practiced and repeated skin contact avoided. Animal studies with this material have resulted in moderate skin irritation following short-term exposure or prolonged/repeated exposure. Skin irritation and body weight loss were observed in 28 day dermal studies on this material in rats, but there were no systemic tissue changes characteristic of disease. Personal hygiene measures taken to prevent skin irritation are expected to be adequate to prevent risk of skin cancer. This product has a sufficiently low vapor pressure to prevent a hazardous buildup of vapors unless the product is heated, used in a confined space with inadequate ventilation or misted. Inhalation of mist or high concentrations of vapors can produce dizziness, headache, and nausea and possibly irritation of the eye, nose and throat. In acute inhalation toxicity tests in rats, during exposure the material caused labored breathing, reduced activity and nasal discharge. Materials of this type have been shown to produce kidney damage in male rats following prolonged inhalation exposures. Following extensive research, this effect appears to be unique to the male rat and is considered to be of little or no relevance in terms of human health risk. Dermal and inhalation exposure to some jet fuel mixtures has been shown to reduce or inhibit certain indicators of immune function in mice. The relevance of these findings for humans is under investigation. Diesel exhaust particulates have been classified by the National Toxicological Program (NTP) to be a reasonably anticipated human carcinogen. Exposure should be minimized to reduce potential risk.

12 . Ecological information

Ecotoxicity	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Biodegradability	
Persistence/degradability	The biodegradability of this material has not been determined.
Mobility	Spillages may penetrate the soil causing ground water contamination.
Bioaccumulative potential	This product is not expected to bioaccumulate through food chains in the environment.

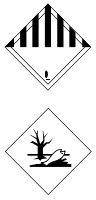
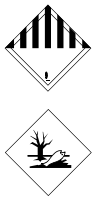
Other ecological information	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

13 . Disposal considerations

Disposal considerations / Waste information	The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
Special Precautions for Landfill or Incineration	No additional special precautions identified.

14 . Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
ADG Classification	Not regulated.	-	-	-	-----	**Remarks** Combustible liquid Class C1 (AS 1940).
IMDG Classification	UN 3082	Environmentally hazardous substance, liquid, n.o.s. (Kerosine)	9	III		**Remarks** Marine Pollutant
IATA/ICAO Classification	UN 3082	Environmentally hazardous substance, liquid, n.o.s. (Kerosine)	9	III		**Remarks** Environmentally hazardous substance mark.

PG* : Packing group

Special precautions for user	No known special precautions required. See Section: "Handling and storage" for additional information.

15 . Regulatory information

Standard for the Uniform Scheduling of Drugs and Poisons

5

Control of Scheduled Carcinogenic Substances

Ingredient name	Schedule
No Listed Substance	

Australia Regulations	Labelling requirements for SUSDP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.
Other regulations	
Europe inventory	All components are listed or exempted.
United States inventory (TSCA 8b)	Not determined.
Australia inventory (AICS)	Not determined.
Canada inventory	Not determined.
China inventory (IECSC)	Not determined.
Japan inventory (ENCS)	Not determined.
Korea inventory (KECI)	Not determined.
Philippines inventory (PICCS)	Not determined.

16 . Other information

Key to abbreviations

AMP = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists, an agency that promulgates exposure standards.
ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail
ADG Code = Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number = Chemical Abstracts Service Registry Number
HAZCHEM Code = Emergency action code of numbers and letters which gives information to emergency services. Its use is required by the ADG Code for Dangerous Goods in bulk.
ICAO = International Civil Aviation Organization.
IATA = International Air Transport Association, the organization promulgating rules governing shipment of goods by air.
IMDG = International Maritime Organization Rules, rules governing shipment of goods by water.
IP 346 = A chemical screening assay for dermal toxicity. The European Commission has recommended that Method IP 346 be used as the basis for labelling certain lubricant oil base stocks for carcinogenicity. The EU Commission has stipulated that the classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346. (See Note L, European Commission Directive 67/548/EEC as amended and adapted.) DMSO is a solvent.
NOHSC = National Occupational Health & Safety Commission, Australia
TWA = Time weighted average
STEL = Short term exposure limit
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

History

Date of issue 14/12/2010.

Date of previous issue 04/10/2010.

Prepared by Product Stewardship

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.