

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name F-34 / AVTUR/FSII
Synonym(s) AVTUR/FSII (C143)(ALT FOR AVCAT AWAY FROM ALB) • NSN: 9130-66-027-9402
 002C0944 - PRODUCT CODE • AVTUR/FSII (FORMERLY) • F-34/AVTUR/FSII (FORMERLY)

1.2 Uses and uses advised against

Use(s) AVIATION TURBINE OIL • FUEL

1.3 Details of the supplier of the safety data sheet

Supplier name VIVA ENERGY AUSTRALIA LTD (FORMERLY SHELL COMPANY OF AUSTRALIA)
Address Level 2, 8 Redfern Road, Hawthorn East, VIC, Australia, 3123
Telephone 1300 134 205, (03) 9666 5444
Fax 1800 808 777; (03) 8823 4800
Email vivaenergy-bus-centre-au@vivaenergy.com.au
Website http://www.vivaenergy.com.au

1.4 Emergency telephone number(s)

Emergency 1800 651 818

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS Classification(s) Flammable Liquids: Category 3
 Aspiration Hazard: Category 1
 Skin Corrosion/Irritation: Category 2
 Aquatic Toxicity (Chronic): Category 2

2.2 Label elements

Signal word DANGER

Pictograms



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.

Prevention statement(s)

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 thoroughly after handling.
 P273 Avoid release to the environment. This statement does not apply where this is the intended use.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

| | |
|------------------------------|--|
| Product name | F-34 / AVTUR/FSII |
| P321 | Specific treatment is advised - see first aid instructions. |
| P331 | Do NOT induce vomiting. |
| P332 + P313 | If skin irritation occurs: Get medical advice/ attention. |
| P362 | Take off contaminated clothing and wash before re-use. |
| P370 + P378 | In case of fire: Use appropriate media for extinction (applies if water increases risk). |
| P391 | Collect spillage. |
| Storage statement(s) | |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| Disposal statement(s) | |
| P501 | Dispose of contents/container in accordance with relevant regulations. |

2.3 Other Hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

| Ingredient | CAS number | EC number | Content |
|--------------------------------|---------------|---------------|-----------|
| KEROSENE | 8008-20-6 | 232-366-4 | <100% |
| KEROSINE, HYDRODESULPHURISED | 64742-81-0 | 265-184-9 | <100% |
| ETHYLBENZENE | 100-41-4 | 202-849-4 | <2% |
| XYLENE | 1330-20-7 | 215-535-7 | <2% |
| CUMENE (ISOPROPYL BENZENE) | 98-82-8 | 202-704-5 | <1% |
| NAPHTHALENE | 91-20-3 | 202-049-5 | <1% |
| TRIMETHYL BENZENE | 25551-13-7 | 247-099-9 | <1% |
| DIETHYLENE GLYCOL METHYL ETHER | 111-77-3 | 203-906-6 | <0.15% |
| ADDITIVE(S) | Not Available | Not Available | remainder |

4. FIRST AID MEASURES

4.1 Description of first aid measures

| | |
|-----------------------------|--|
| Eye | If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. |
| Inhalation | If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing. |
| Skin | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor. |
| Ingestion | For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. |
| First aid facilities | Eye wash facilities and safety shower should be available. |

4.2 Most important symptoms and effects, both acute and delayed

No information provided.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

5.2 Special hazards arising from the substance or mixture

Flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones, etc when handling. Earth containers when dispensing fluids. May evolve sulphur oxides when heated to decomposition.

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5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

3Y
 3 Foam
 Y Self Contained Breathing apparatus and protective gloves.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, preferably flammables store, removed from direct sunlight, incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation and fire protection systems.

7.3 Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

| Substance | Reference | TWA | | STEL | |
|-------------------|-----------|-----|-------------------|------|-------------------|
| | | ppm | mg/m ³ | ppm | mg/m ³ |
| Cumene | SWA (AUS) | 25 | 125 | 75 | 375 |
| Ethyl benzene | SWA (AUS) | 100 | 434 | 125 | 543 |
| Kerosene (ACGIH) | SWA (AUS) | -- | 200 | -- | -- |
| Naphthalene | SWA (AUS) | 10 | 52 | 15 | 79 |
| Trimethyl benzene | SWA (AUS) | 25 | 123 | -- | -- |
| Xylene | SWA (AUS) | 80 | -- | 150 | -- |

Biological limits

| Ingredient | Reference | Determinant | Sampling time | BEI |
|--------------|-----------|--|---------------------------------|--------------------|
| ETHYLBENZENE | ACGIH BEI | Sum of mandelic acid and phenylglyoxylic acid in urine | End of shift at end of workweek | 0.7 g/g creatinine |
| | ACGIH BEI | Ethyl benzene in end-exhaled air | Not critical | - |

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Biological limits

| Ingredient | Reference | Determinant | Sampling time | BEI |
|-------------|-----------|--|---------------|--------------------|
| NAPHTHALENE | ACGIH BEI | 1-Napthol (with hydrolysis) + 2 Napthol (with hydrolysis) | End of shift | |
| XYLENE | ACGIH BEI | Methylhippuric acids in urine | End of shift | 1.5 g/g creatinine |

8.2 Exposure controls

Engineering Controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.

PPE

Eye/Face

Wear splash-proof goggles.

Hand

Wear nitrile or neoprene gloves.

Body

Wear coveralls.

Respiratory

Where an inhalation risk exists, wear an Air-line respirator or a Type A (Organic vapour) respirator. If spraying, wear a Type A-Class P1 (Organic gases/vapours and Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|---------------------------|----------------------------|
| Appearance | PALE STRAW COLOURED LIQUID |
| Odour | HYDROCARBON ODOUR |
| Odour Threshold | NOT AVAILABLE |
| pH | NOT AVAILABLE |
| Melting Point | NOT AVAILABLE |
| Boiling Point | 150°C to 300°C |
| Flash Point | > 38°C (cc) |
| Evaporation Rate | NOT AVAILABLE |
| Flammability | FLAMMABLE |
| Upper Explosion Limit | 6.0 % |
| Lower Explosion Limit | 1.0 % |
| Vapour Pressure | < 0.1 hPa @ 20°C |
| Vapour Density | NOT AVAILABLE |
| Solubility (water) | INSOLUBLE |
| Partition Coefficient | 2 to 6 (n-Octanol/Water) |
| Autoignition Temperature | > 220°C |
| Decomposition Temperature | NOT AVAILABLE |
| Viscosity | 1 cSt to 2 cSt @ 40°C |
| Explosive Properties | NOT AVAILABLE |
| Oxidising Properties | NOT AVAILABLE |
| Specific Gravity | 0.775 to 0.84 |

9.2 Other information

No information provided.

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10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

| | |
|------------------------------|---|
| Health hazard summary | May be harmful - irritant. This product has the potential to cause adverse health effects with over exposure. Use safe work practices to avoid eye or skin contact and inhalation. Chronic exposure may result in central nervous system (CNS) damage. Harmful. May cause lung damage if swallowed. |
| Eye | Irritant. Contact may result in irritation, lacrimation, pain and redness. May result in burns with prolonged contact. |
| Inhalation | Irritant. Over exposure may result in irritation of the nose and throat, coughing and headache. High level exposure may result in nausea, dizziness and drowsiness. |
| Skin | Irritant. Contact may result in drying and defatting of the skin, rash and dermatitis. May be absorbed through skin with harmful effects. |
| Ingestion | Harmful. Ingestion may result in nausea, vomiting, abdominal pain, laxative effect, diarrhoea, and drowsiness with large quantities. Aspiration or inhalation may cause chemical pneumonitis and pulmonary oedema. |
| Toxicity data | <p>KEROSENE (8008-20-6)</p> <p>LD50 (Ingestion): 20 000 mg/kg (guinea pig)</p> <p>LD50 (Intravenous): 180 mg/kg (rabbit)</p> <p>LDLo (Ingestion): 500 mg/kg (man)</p> <p>LDLo (Intraperitoneal): 800 mg/kg (dog)</p> <p>LDLo (Intravenous): 200 mg/kg (dog)</p> <p>TDLo (Ingestion): 3570 mg/kg (man)</p> <p>ETHYLBENZENE (100-41-4)</p> <p>LC50 (Inhalation): 50 g/m³/2 hours (mouse)</p> <p>LCLo (Inhalation): 4000 ppm/4 hours (rat)</p> <p>LD50 (Ingestion): 3500 mg/kg (rat)</p> <p>LD50 (Skin): 17800 mg/kg (rabbit)</p> <p>TCLo (Inhalation): 100 ppm/7 hours (human)</p> <p>XYLENE (1330-20-7)</p> <p>LC50 (Inhalation): 5000 ppm/4 hours (rat)</p> <p>LCLo (Inhalation): 10000 ppm/6 hours (man)</p> <p>LD50 (Ingestion): 4300 mg/kg (rat)</p> <p>LD50 (Intraperitoneal): 1548 mg/kg (mouse)</p> <p>LD50 (Skin): > 1700 mg/kg (rabbit)</p> <p>LD50 (Subcutaneous): 1700 mg/kg (rat)</p> <p>CUMENE (ISOPROPYL BENZENE) (98-82-8)</p> <p>LC50 (Inhalation): 24700 mg/m³/2H (mouse)</p> <p>LCLo (Inhalation): 8000 ppm/4H (rat)</p> <p>LD50 (Ingestion): 1400 mg/kg (rat)</p> <p>LD50 (Skin): 12300 ug/kg (rabbit)</p> <p>TCLo (Inhalation): 200 ppm (human-narcosis)</p> <p>NAPHTHALENE (91-20-3)</p> <p>LC50 (Inhalation): > 340 mg/m³/1hr (rat)</p> |

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| Product name | F-34 / AVTUR/FSII |
| | LD50 (Ingestion): 316 mg/kg (mouse) |
| | LD50 (Intraperitoneal): 150 mg/kg (mouse) |
| | LD50 (Intravenous): 100 mg/kg (mouse) |
| | LD50 (Skin): > 2500 mg/kg (rat) |
| | LD50 (Subcutaneous): 969 mg/kg (mouse) |
| | LDLo (Ingestion): 100 mg/kg (child) |
| | TCLo (Inhalation): 250 mg/m ³ (human) |
| | TDLo (Ingestion): 158 mg/kg (mouse) |
| | TDLo (Intraperitoneal): 100 mg/kg (rat) |
| | TDLo (Skin): 0.03 mL/kg/24 hours (rabbit) |
| | TRIMETHYL BENZENE (25551-13-7) |
| | LD50 (Ingestion): 8970 mg/kg (rat) |
| | DIETHYLENE GLYCOL METHYL ETHER (111-77-3) |
| | LD50 (Ingestion): 4160 mg/kg (guinea pig) |
| | LD50 (Skin): 650 mg/kg (rabbit) |
| | TDLo (Ingestion): 32 mg/kg reproductive (mouse) |

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Results of PBT and vPvB assessment

No information provided.

12.6 Other adverse effects

SOIL: If released to soil, kerosene is expected to biodegrade under both aerobic and anaerobic conditions. Some components of kerosene may adsorb very strongly to soil. Kerosene may rapidly volatilise from both moist and dry soil although its expected strong adsorption may significantly affect the rate of this process. WATER: If released to water, kerosene is expected to biodegrade under both aerobic and anaerobic conditions.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Wearing the protective equipment outlined, ensure all ignition sources are extinguished. For small quantities, absorb on paper, sand or similar and evaporate under a fume cupboard or open area. For large volumes, atomise into incinerator (mixing with more flammable solvent if required) or recycle by gravimetric separation, distilling & reusing. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



| | Land Transport (ADG) | Sea Transport (IMDG/IMO) | Air Transport (IATA/ICAO) |
|-------------------------------------|---------------------------------|-------------------------------------|--------------------------------------|
| 14.1 UN number | 1863 | 1863 | 1863 |
| 14.2 UN proper shipping name | FUEL, AVIATION, TURBINE ENGINE | | |

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14.3 Transport hazard classes

| | | | |
|---------------------------|----------------|---|---|
| DG Class | 3 | 3 | 3 |
| Subsidiary risk(s) | None Allocated | - | - |

14.4 Packing group

| | | |
|-----|-----|-----|
| III | III | III |
|-----|-----|-----|

14.5 Environmental hazards

Marine Pollutant

14.6 Special precautions for user

| | | |
|---------------------|----|----------|
| Hazchem Code | 3Y | |
| EMS | | F-E, S-E |

14.7 Transport in bulk

| | |
|---------------------|---------|
| MARPOL 73/78 | Annex I |
|---------------------|---------|

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule Classified as a Schedule 5 Poison using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications
 F - Highly flammable
 N - Dangerous for the environment
 Xi - Irritant
 Xn - Harmful

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 reach of children. |
| S23: | Do not breathe gas/fumes/vapour/spray (where applicable). |
| S24: | Avoid contact with skin. |
| S29: | Do not empty into drains. |
| 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 container or label. |

Inventory listing(s) **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
 All components are listed on AICS, or are exempt.

15.2 Chemical safety assessment

No information provided.

16. OTHER INFORMATION

Additional information **WORK PRACTICES - SOLVENTS:** Organic solvents may present both a health and flammability hazard. It is recommended that engineering controls should be adopted to reduce exposure where practicable (for example, if using indoors, ensure explosion proof extraction ventilation is available). Flammable or combustible liquids with explosive limits have the potential for ignition from static discharge. Refer to AS 1020 (The control of undesirable static electricity) and AS 1940 (The storage and handling of flammable and combustible liquids) for control procedures.

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

HEALTH EFFECTS FROM EXPOSURE:
 It should be noted that the effects from exposure to this product will depend on several factors including:

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frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

COLOUR RATING SYSTEM: RMT has assigned all ChemAlert reports a colour rating of Green, Amber or Red for the sole purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all ChemAlert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline, a Green colour rating indicates a low hazard, an Amber colour rating indicates a moderate hazard and a Red colour rating indicates a high hazard.

While all due care has been taken by RMT in the preparation of the Colour Rating System, it is intended as a guide only and RMT does not provide any warranty in relation to the accuracy of the Colour Rating System. As far as is lawfully possible, RMT accepts no liability or responsibility whatsoever for the actions or omissions of any person in reliance on the Colour Rating System.

Abbreviations

| | |
|-------------------|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonized System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m ³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| PEL | Permissible Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| REACH | Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| SWA | Safe Work Australia |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

Report Status

This ChemAlert report has been independently compiled by RMT's scientific department utilising the original Safety Data Sheet ("SDS") for the product provided to RMT by the manufacturer. The information is based on the latest chemical and toxicological research and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. It is an independent collation by RMT of information obtained from the original SDS for this product. Its content has not been authorised or verified by the manufacturer / distributor of the chemical to which it relates.

This ChemAlert report does not constitute the manufacturer's original SDS and is not intended to be a replacement for same. It is provided to subscribers of ChemAlert as a reference tool only, is not all-inclusive and does not represent any guarantee as to the properties of the product. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

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Prepared By Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

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End of Report