

Safety Data Sheet

AeroShell Turbine Oil 500

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Code 001A0083
Infosafe No. ACISL GB/eng/C
Issued Date 30/05/2003
Product Type/Use Synthetic lubricating oil for aircraft turbine engines. For further details consult the AeroShell Book on www.shell.com/aviation.

Other Names	Name	Code
	AeroShell Turbine Oil 500	140001168147

Supplier	Telephone Numbers
SHELL UK PRODUCTS LTD Stanlow Manufacturing Complex PO Box 3 Ellesmere Port CH65 4HB Technical Contact: Product HSE Department United Kingdom	Emergency Tel. 0151-350-4595 Telephone/Fax Number Tel: 0151-350-4000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation Description

Blend of synthetic esters and additives.

Name	CAS	EINECS	Proportion	Hazard	R Phrase
Tricresyl phosphate (mixed isomers)	1330-78-5	215-548-8	1-2.4 %	Xn, N	R21/22, R51/53
N-phenyl-1-naphthylamine	90-80-2	201-983-0	1-2 %	Xi, Xn, N	R43, R20/22, R50/53
Alkylated diphenylamine	68411-46-1	270-128-1	0.1-0.9 %	N	R51/53

Other Information

See Section 16 'Other Information' for full text of each relevant Risk Phrase.

3. HAZARDS IDENTIFICATION



EC Classification

Sensitising. Dangerous for the Environment.

Human Health Hazards

May cause sensitization by skin contact. Prolonged or repeated exposure may give rise to dermatitis. Used oil may contain harmful impurities. May contain mixed isomers of tricresyl phosphate. Tricresyl phosphate may be absorbed either through the skin, by ingestion or by inhalation. Tricresyl phosphate is neurotoxic in animals and man. These effects are delayed and may be permanent depending upon the degree of exposure. However, the concentration of these harmful isomers of TCP in this product is so low that neurotoxic effects are not expected.

Safety Hazards

Not classified as flammable, but will burn.

Environmental Hazards

Harmful to aquatic organisms. May cause long term adverse effects in the aquatic environment.

4. FIRST AID MEASURES**Symptoms and Effects**

May cause an allergic skin reaction in sensitive individuals.

Inhalation

In the unlikely event of dizziness or nausea, remove casualty to fresh air. If symptoms persist, obtain medical attention.

Skin

Remove contaminated clothing and wash affected skin with soap and water. If persistent irritation occurs, obtain medical attention. If high pressure injection injuries occur, obtain medical attention immediately.

Eye

Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.

Ingestion

Wash out mouth with water and obtain medical attention. Do not induce vomiting.

Advice to Doctor

Treat symptomatically. Aspiration into the lungs may cause chemical pneumonitis. Dermatitis may result from prolonged or repeated exposure.

High pressure injection injuries may require surgical intervention and possibly steroid therapy to minimise tissue damage and loss of function. Because entry wounds are small and may not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Emesis of lubricants is not usually necessary, unless a large amount has been ingested, or some other compound has been dissolved in the product. If this is indicated, for example, when there is rapid onset of central nervous system depression from large ingested volume - gastric lavage under controlled hospital conditions, with full protection of the airway is required. Supportive care may include oxygen, arterial blood gas monitoring, respiratory support, and, if aspiration has occurred, treatment with corticosteroids and antibiotics. Seizures should be controlled with Diazepam, or appropriate equivalent drug.

5. FIRE FIGHTING MEASURES**Specific Hazards**

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.

Extinguishing Media

Foam and dry chemical powder. Carbon dioxide, sand or earth may be used for small fires only.



Unsuitable Extinguishing Media

Water in jet. Use of halon extinguishers should be avoided for environmental reasons.

Protective Equipment

Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Avoid contact with skin and eyes. Wear PVC, Neoprene or nitrile rubber gloves. Wear rubber knee length safety boots and PVC Jacket and Trousers. Wear safety glasses or full face shield if splashes are likely to occur.

Environmental Precautions

Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. Inform local authorities if this cannot be prevented.

Clean-up Methods - Small Spillages

Absorb liquid with sand or earth. Sweep up and remove to a suitable, clearly marked container for disposal in accordance with local regulations.

Clean-up Methods - Large Spillages

Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Dispose of as for small spills.

7. HANDLING AND STORAGE

Handling

Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Avoid prolonged or repeated contact with skin. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Prevent spillages. 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. In addition to any specific recommendations given for controls of risks to health, safety and the environment, an assessment of risks must be made to help determine controls appropriate to local circumstances. Exposure to this product should be reduced as low as reasonably practicable. Reference should be made to the Health and Safety Executive's publication 'COSHH Essentials'.

Storage

Keep in a cool, dry, well-ventilated place. Use properly labelled and closeable containers. Avoid direct sunlight, heat sources, and strong oxidizing agents.

Storage Temperatures

0°C Minimum. 50°C Maximum.

Recommended Materials

For containers or container linings, use mild steel or high density polyethylene.

Unsuitable Materials

For containers or container linings, avoid PVC.

Other Information

Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION



Exposure Limits

No Exposure Limit Established

Exposure Controls

The use of personal protective equipment is only one aspect of an integrated approach to the Control Of Substances Hazardous to Health.

The management of Health and Safety at Work Regulations 1992 require employers to identify and evaluate the risks to health and to implement appropriate measures to eliminate or minimise those risks. The choice of personal protective equipment is highly dependent upon local conditions, e.g. exposure to other chemical substances and micro-organisms, thermal hazards (protection from extremes of cold and heat), electrical hazards, mechanical hazards and appropriate degree of manual dexterity required to undertake an activity. Whilst the content of this section may inform the choice of personal protective equipment used, the limitations of any information which can be provided must be fully understood, e.g. personal protective equipment chosen to protect employees from occasional splashes maybe entirely inadequate for activities involving partial or complete immersion. If the levels of oil mist or vapour in air are likely to exceed the occupational exposure standards then consideration should be given to the use of local exhaust ventilation to reduce personal exposure.

The choice of personal protective equipment should only be undertaken in the light of a full risk assessment by a suitably qualified competent person (e.g. a professionally qualified occupational hygienist).

Effective protection is only achieved by correctly fitting and well maintained equipment and employers should ensure that appropriate training is given. All personal protective equipment should be regularly inspected and replaced if defective.

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. Half masks (EN 149) or valved half masks (EN 405) in combination with type A2 (EN 141) and P2/3 (EN 143) pre-filters maybe considered.

If product is subjected to elevated temperatures, half masks (EN 149) or valved half masks (EN 405) in combination with type AX (EN 371) and P2/3 (EN 143) prefilters maybe considered.

Hand Protection

Chemical protective gloves are made from a wide range of materials, but there is no single glove material (or combination of materials) which gives unlimited resistance to any individual or combination of substances or preparations. The extent of the breakthrough time will be affected by a combination of factors which include permeation, penetration, degradation, use pattern (full immersion, occasional contacts) and how the glove is stored when not in use.

Theoretical maximum levels of protection are seldom achieved in practice and the actual level of protection can be difficult to assess. Effective breakthrough time should be used with care and a margin of safety should be applied. HSE guidance on protective gloves recommends a 75% safety factor to be applied to any figures obtained in a laboratory test. Nitrile gloves may offer relatively long breakthrough times and slow permeation rates. Test data, e.g breakthrough data obtained through test standard EN374-3:1994 are available from reputable equipment suppliers.

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. A non perfumed moisturiser should be applied.

Eye Protection

Goggles conforming to a minimum standard of EN 166 345B should be considered if there is a possibility of eye contact with the product through splashing. Higher rated eye protection must be considered for highly hazardous operations or work areas. For example, employees involved in metalworking operations such as chipping, grinding or cutting may require additional protection to avert injury from fast moving particles or broken tools.

Body Protection

Minimise all forms of skin contact. Overalls and shoes with oil resistant soles should be worn. Launder overalls and undergarments regularly.

Environmental Exposure Controls

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

local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Colour	Variable - yellow/red/brown.
Physical State	Liquid at ambient temperature.
Odour	Slight.
pH Value	Data not available.
Vapour Pressure	Data not available.
Initial Boiling Point	Data not available.
Solubility in Water	Negligible.
Density	circa 1005 kg/m ³ at 15°C.
Flash Point	circa 260°C (COC).
Flammable Limits - Upper	Data not available.
Flammable Limits - Lower	Data not available.
Auto-Ignition Temperature	425°C (typical value).
Kinematic Viscosity	circa 27 mm ² /s at 40°C.
Evaporation Rate	Data not available.
Vapour Density (Air=1)	Greater than 1.
Partition co-efficient, n-octanol/water	Data not available.
Pour Point	<-57°C.

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to Avoid

Extremes of temperature and direct sunlight.

Materials to Avoid

Strong oxidizing agents.

Hazardous Decomposition Products

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

11. TOXICOLOGICAL INFORMATION

Basis for Assessment

Toxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the toxicology of similar products.

Acute Toxicity - Oral

LD50 expected to be > 2000 mg/kg.

Acute Toxicity - Dermal

LD50 expected to be > 2000 mg/kg.

Acute Toxicity - Inhalation

Not considered to be an inhalation hazard under normal conditions of use.

Eye Irritation

Expected to be slightly irritating.

Skin Irritation

Expected to be slightly irritating.

Respiratory Irritation

If mists are inhaled, slight irritation of the respiratory tract may occur.

Skin Sensitisation

Expected to be a skin sensitizer.

Carcinogenicity

Components are not known to be associated with carcinogenic effects.

Mutagenicity

Not considered to be a mutagenic hazard.

Reproductive Toxicity

Not considered to be toxic to reproduction.

Other Information

Prolonged and/or repeated contact with this product can result in defatting of the skin, particularly at elevated temperatures. This can lead to irritation and possibly dermatitis, especially under conditions of poor personal hygiene. Skin contact should be minimised. Used engine oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible. It is prudent to assume that prolonged or repeated exposure to used engine oils may cause skin cancer.

12. ECOLOGICAL INFORMATION

Basis for Assessment

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Mobility

Liquid under most environmental conditions. Sinks in fresh water, but will float on seawater. If it enters soil, it will adsorb to soil particles and will not be mobile.

Persistence / Degradability

Major constituents are expected to be readily biodegradable, but the product contains components that may persist in the environment.

Bioaccumulation

Contains components with the potential to bioaccumulate.

Ecotoxicity

Poorly soluble mixture. May cause physical fouling of aquatic organisms. Product is expected to be harmful to aquatic organisms, LL/EL50 10 -100 mg/l. (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Other Adverse Effects

Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities.

13. DISPOSAL CONSIDERATIONS



Waste Disposal

Recycle or dispose of in accordance with prevailing regulations, with a recognised collector or contractor. The competence of the contractor to deal satisfactorily with this type of product should be established beforehand. Do not pollute the soil, water or environment with the waste product.

Product Disposal

As for waste disposal.

Container Disposal

Recycle or dispose of in accordance with the legislation in force with a recognised collector or contractor.

Local Legislation

The Special Waste Regulations 1996.

14. TRANSPORT INFORMATION

Transport Information

Not dangerous for transport under ADR/RID, IMO and IATA/ICAO regulations.

15. REGULATORY INFORMATION

EC Symbols	Xi
EC Risk Phrase	R43 May cause sensitization by skin contact. R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
EC Safety Phrase	S24 Avoid contact with skin. S37 Wear suitable gloves. S61 Avoid release to the environment. Refer to special instructions/safety data sheet.

EINECS

All components listed or polymer exempt.

TSCA (USA)

All components in compliance.

National Legislation

Environmental Protection Act 1990 (as amended).

Health and Safety at Work Act 1974

Consumers Protection Act 1987

Control of Pollution Act 1974

Environmental Act 1995

Factories Act 1961

Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labelling) Regulations

Chemicals (Hazard Information and Packaging for Supply) Regulations 2002.

Control of Substances Hazardous to Health Regulations 1994 (as amended).

Road Traffic (Carriage of Dangerous Substances in Packages) Regulations

Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations

Road Traffic (Carriage of Dangerous Substances in Road Tankers in Tank Containers) Regulations

Road Traffic (Training of Drivers of Vehicles Carrying Dangerous Goods) Regulations

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations

Health and Safety (First Aid) Regulations 1981

Personal Protective Equipment (EC Directive) Regulations 1992

Personal Protective Equipment at Work Regulations 1992



Packaging & Labelling

Contains N-phenyl-1-naphthylamine.

Safety data sheet available for professional user on request.

16. OTHER INFORMATION

Revisions Highlighted

No amendments made to information. To assist harmonisation of sds authoring practices, a version number has been introduced.

References

European Model Code of Safe Practice in the Storage and Handling of Petroleum Products. EN 374-2:1994

Protective gloves against chemicals and micro-organisms

EN 149:2001 Respiratory protective devices - filtering half masks to protect against particles - requirements, testing, marking

EN 405:1992 Respiratory protective devices - valved filtering half masks to protect against gases or gases and particles - requirements, testing, marking.

EN 141:2000 Respiratory protective devices - gas filters and combined filters - requirements, testing, marking

EN 143:2000 Respiratory protective devices - particle filters - requirements, testing, marking

EN 166:1995 Personal eye-protection - specification.

Restrictions

This product must be used, handled and applied in accordance with the requirements of the equipment manufacturer's manuals, bulletins and other documentation.

List of R Phrases in Section 2

R43 May cause sensitization by skin contact.

R20/22 Harmful by inhalation and if swallowed.

R21/22 Harmful in contact with skin and if swallowed.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Technical Contact Numbers

0151-350-4000.

Further Information

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It does not constitute a guarantee for any specific property of the product.

... End Of SDS ...

