

## Safety Data Sheet

## AeroShell Oil W100 Plus

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

**Product Code** 001A9642  
**Infosafe No.** ACIQY GB/eng/C  
**Issued Date** 30/05/2003  
**Product Type/Use** Mineral lubricating oil for aircraft piston engines. For further details consult the AeroShell Book on [www.shell.com/aviation](http://www.shell.com/aviation).

| Other Names | Name                    | Code         |
|-------------|-------------------------|--------------|
|             | AeroShell Oil W100 Plus | 140001168133 |

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

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Preparation Description**

Highly refined mineral oils and additives. The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

**Dangerous Components / Constituents**

Exposure limits apply to the following components: Highly refined mineral oil.

| Name                | CAS      | EINECS    | Proportion | Hazard | R Phrase |
|---------------------|----------|-----------|------------|--------|----------|
| Triphenyl phosphate | 115-86-6 | 204-112-2 | 0.1-0.9 %  | N      | R50/53   |

## 3. HAZARDS IDENTIFICATION

|                          |                                |
|--------------------------|--------------------------------|
| <b>EC Classification</b> | Dangerous for the Environment. |
|--------------------------|--------------------------------|

**Human Health Hazards**

No specific hazards under normal use conditions. Prolonged or repeated exposure may give rise to dermatitis.



Used oil may contain harmful impurities.

#### **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**

Not expected to give rise to an acute hazard under normal conditions of use.

#### **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 result in chemical pneumonitis. Dermatitis may result from prolonged or repeated exposure.

High pressure injection injuries require surgical intervention and possibly steroid therapy to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

There may be a risk to health where low viscosity products are aspirated into the lungs following vomiting, although this is uncommon in adults. Such aspiration would cause intense local irritation and chemical pneumonitis. Children, and those in whom consciousness is impaired, will be more at risk. 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. The storage of this product maybe subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance maybe obtained from the local environmental agency office.

### **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**



| Substance           | Regulations  | Exposure Duration | Exposure Limit | Units             | Notes |
|---------------------|--|-------------------|----------------|-------------------|-------|
| Oil mist, mineral   | Health and Safety Executive. EH40; Occupational Exposure Limits. | TWA               | 5              | mg/m <sup>3</sup> |       |
|                     | Health and Safety Executive. EH40; Occupational Exposure Limits. | STEL              | 10             | mg/m <sup>3</sup> |       |
| Triphenyl phosphate | Health and Safety Executive. EH40; Occupational Exposure Limits. | TWA               | 3              | mg/m <sup>3</sup> |       |
|                     | Health and Safety Executive. EH40; Occupational Exposure Limits. | STEL              | 6              | mg/m <sup>3</sup> |       |

### 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. Reference should be made to HSE's publication Methods for the Determination of Hazardous Substances (MDHS) 84 - Measurement of oil mist from mineral oil-based metalworking fluids. Measurement of an employee's exposure to oil vapour maybe supplemented through the use of stain tubes. In the first instance, further guidance maybe obtained through HSE's publication 'COSHH - a brief guide to the regulations' (INDG 136(rev1)).

### Respiratory Protection

At standard temperature and pressure, the Occupational Exposure Standard for oil vapour is unlikely to be exceeded. 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

|  |   |
|--|---|
| <b>Colour</b>                                  | Amber.                                    |
| <b>Physical State</b>                          | Liquid at ambient temperature.            |
| <b>Odour</b>                                   | Characteristic mineral oil.               |
| <b>pH Value</b>                                | Data not available.                       |
| <b>Vapour Pressure</b>                         | Expected to be less than 0.5 Pa at 20°C.  |
| <b>Initial Boiling Point</b>                   | Expected to be above 280°C.               |
| <b>Solubility in Water</b>                     | Negligible.                               |
| <b>Density</b>                                 | circa 892 kg/m <sup>3</sup> at 15°C.      |
| <b>Flash Point</b>                             | circa 250°C.                              |
| <b>Flammable Limits - Upper</b>                | 10% V/V (typical) (based on mineral oil). |
| <b>Flammable Limits - Lower</b>                | 1% V/V (typical) (based on mineral oil).  |
| <b>Auto-Ignition Temperature</b>               | Expected to be above 320°C.               |
| <b>Kinematic Viscosity</b>                     | circa 19.5 mm <sup>2</sup> /s at 100°C.   |
| <b>Evaporation Rate</b>                        | Data not available.                       |
| <b>Vapour Density (Air=1)</b>                  | Greater than 5.                           |
| <b>Partition co-efficient, n-octanol/water</b> | Log Pow expected to be greater than 6.    |
| <b>Pour Point</b>                              | circa -20°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**

Not expected to be a skin sensitizer.

**Carcinogenicity**

Product is based on mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Other 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. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

#### **Persistence / Degradability**

Not expected to be readily biodegradable. Major constituents are expected to be inherently 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.

### 14. TRANSPORT INFORMATION

#### **Transport Information**

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

### 15. REGULATORY INFORMATION

|                         |  |
|-------------------------|--|
| <b>EC Symbols</b>       | None.  |
| <b>EC Risk Phrase</b>   | R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| <b>EC Safety Phrase</b> | S61 Avoid release to the environment.<br>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

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

#### GUIDANCE NOTES

UK Chemicals Regulatory Atlas, An Overview of how to guide your chemical through to regulatory compliance (DTI).

HSG71 The storage of packaged dangerous substances.

EH/40 Occupational Exposure Limits.

EH/58 The Carcinogenicity of Mineral Oils.

MS24 Health surveillance of occupational skin disease.

HSG 53 The selection, use and maintenance of respiratory protective equipment: A practical guide.

HSG 206 Cost and effectiveness of chemical protective gloves for the workplace: Guidance for employers and health and safety specialists.

L74 First Aid at work: Approved Code of Practice and Guidance.

HSG 136 Workplace transport safety : guidance for employers.

INDG234 (rev) Are you Involved in the Carriage of Dangerous Goods by Road or Rail

#### OTHER LITERATURE

Concawe Report 3/82 Precautionary Advice on the Handling of Used Engine Oils

Concawe Report 86/69 Health Aspects of Worker Exposure to Oil Mists

Concawe Report 01/97 Petroleum Products - First Aid Emergency and Medical Advice

Concawe Report 01/53 Classification and labelling of petroleum substances according to the EU dangerous substances directive ( Concawe recommendations August 2001)

Concawe Report 01/54 environmental classification of petroleum substances summary data and rationale

Concawe Report 5/02 amended safety data sheet directive ( 2001/58/EC)

Department of the Environment - Waste Management - The Duty of Care - A Code of Practice

Concawe, Boulevard du souverain 165 B - 1160 Brussels, Belgium

[www.concawe.be](http://www.concawe.be)





**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**

R50/53 Very 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 ...

