Safety Data Sheet

AeroShell Fluid 2XN

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

Product Code 001A0046
Infosafe No. ACITE DE/eng/C
Issued Date 01.04.2008
Product Type/Use Corrosion inhibited mineral oil for aircraft engine preservation. For further details consult the AeroShell Book on www.shell.com/aviation.

Other Names Name Code
AeroShell Fluid 2XN 140001168098

Supplier Shell Deutschland Oil GmbH
Suhrenkamp 71-77
22335 Hamburg
Auskunftgebender Bereich:
- Anwendungstechnische Informationen:
  Tel. (040) 3003-8830
- Auskunft zum Sicherheitsdatenblatt
  Tel. (040) 6324-6255
GERMANY

Telephone Numbers
Emergency Tel. 040-6324-5110
Telephone/Fax Number
Tel: 040-6324-0 Fax: 040-632 1051

Email lubricantSDS@shell.com

2. HAZARDS IDENTIFICATION

EC Classification Not classified as Dangerous under EC criteria.

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. Avoid oil mists.

Environmental Hazards
Not classified as dangerous for the environment.

3. 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.
### 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. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.

**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 require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function.

### 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.

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
-20°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.

Storage Class
Not Applicable.

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

Fire Class
B.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits
No Exposure Limit Established

Exposure Controls
Not applicable.

Respiratory Protection
Respiratory protection is required in the case of oil mists.

Hand Protection
Protective gloves made from PVC or nitrile rubber, so far as safely permissible. The characteristics of the protective gloves shall be determined by the conditions existing in practice (e.g. multiple use, mechanical loads, temperature conditions, strength and duration of the exposure which can be expected). Suitability tests by the user are recommended before selection of appropriate gloves.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Dark brown</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid at ambient temperature.</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic mineral oil.</td>
</tr>
<tr>
<td>pH Value</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Initial Boiling Point</td>
<td>Expected to be above 280°C.</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Negligible</td>
</tr>
<tr>
<td>Density</td>
<td>circa 900 kg/m3 at 15°C.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>circa 255°C (COC).</td>
</tr>
<tr>
<td>Flammable Limits - Upper</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Flammable Limits - Lower</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>circa 21 mm²/s at 100°C.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Vapour Density (Air=1)</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Partition co-efficient, n-octanol/water</td>
<td>Data not available.</td>
</tr>
<tr>
<td>Pour Point</td>
<td>-17°C.</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

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. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed. Used 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.

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 practically non-toxic to aquatic organisms, LL/EL50 >100 mg/l. (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

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, by 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.

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

**EU Waste Disposal Code (EWC)**
13 02 05 mineral-based non-chlorinated engine, gear and lubricating oils. Classification of waste is always the responsibility of the end user.

14. TRANSPORT INFORMATION

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

**ADR/RID Class**
None Allocated

**ADR/RID Packing Group**
None Allocated

**IMDG Hazard Class**
None Allocated

**IMDG Packing Group**
None Allocated

**ADNR Class**
None Allocated

**IATA Hazard Class**
None Allocated

**IATA Packing Group**
None Allocated

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>EC Symbols</th>
<th>None.</th>
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</thead>
<tbody>
<tr>
<td>EC Risk Phrase</td>
<td>Not classified.</td>
</tr>
<tr>
<td>EC Safety Phrase</td>
<td>Not classified.</td>
</tr>
<tr>
<td>EINECS</td>
<td>All components listed or polymer exempt.</td>
</tr>
<tr>
<td>TSCA (USA)</td>
<td>All components in compliance.</td>
</tr>
</tbody>
</table>

**Packaging & Labelling**
Safety data sheet available for professional user on request.

**Seveso classification**
Product is not listed.

**Technical Rules Air**
Product not listed by name. Observe section 5.2.5 in connection with section 5.4.9.

**Water Endangerment Class (WGK)**
WGK 2 (VwVwS 5/99, APPENDIX 2).
Volatile Organic Compounds
None.

16. OTHER INFORMATION

Revisions Highlighted
Revised according to REACH Legislation

References
Concawe Report 01/53 - Classification and labelling of petroleum substances according to the EU dangerous substances directive.
Concawe Report 01/54 - Environmental Classification of Petroleum Substances - Summary Data and Rationale
Concawe Report 05/87 - Health aspects of lubricants.

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

Technical Contact Numbers
(040) 3003-8830.

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 ...