Technical Data Sheet

Formerly Known As: **AeroShell Grease 33MS**

AeroShell **Grease *64***

AeroShell Grease 64 comprises AeroShell Grease 33 fortified with 5% molybdenum disulphide. It possesses the enhanced anti-wear and anti-corrosion properties of AeroShell Grease 33 with the added EP (Extreme Pressure) properties provided by the addition of a solid lubricant.
The useful operating temperature range is –73°C to +121°C.

DESIGNED TO MEET CHALLENGES

Main Applications

AeroShell Grease 33 has established itself as the answer to most of the airframe's General Purpose, airframe greasing requirements, being approved for use in Boeing, Airbus and many other aircraft types. It sets the standard with exceptional anti-corrosion and anti-wear performance while allowing aircraft operators to shrink their grease inventory and reduce the risk of misapplication. However, there remains a small number of highly loaded, sliding applications on the airframe where the additional boost of molybdenum disulphide will always be required. To address this need, Shell Aviation has developed AeroShell Grease 64. Sharing the same advanced grease technology as its parent, AeroShell Grease 64 also possesses the extreme pressure (EP) characteristics provided by molybdenum disulphide.

Specifications, Approvals & Recommendations

- COMAC Approved to QPL-CMS-OL-311
- Approved MIL-G-21164D (US)
- Approved DEF STAN 91-57
- Equivalent DCSEA 353/A (French)
- NATO Code G-353
- Joint Service Designation XG-276

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

Compatibility & Miscibility

AeroShell Grease 64 contains a synthetic oil and must not be used with incompatible seal materials.

Typical Physical Characteristics

Properties			Method	MIL-G-21164D	Typical
Oil type				-	Synthetic Hydrocarbon / Ester
Thickener type				-	Lithium Complex
Base Oil viscosity	@-40°C	mm^2/s		-	1840
Base Oil viscosity	@40°C	mm^2/s		-	14.2
Base Oil viscosity	@100°C	mm^2/s		-	3.4
Useful operating temperature range		°C		-	-73 to +121
Drop point		°C		165 min	234
Worked penetration	@25°C			260 to 310	281
Unworked penetration	@25°C			200 min	288
Worked stability (100,000 strokes)				260 - 375	309
Bomb Oxidation pressure drop 100 hrs		kPa (psi)		68.9 (10) max	3.5 (0.5)
Bomb Oxidation pressure drop 500 hrs		kPa (psi)		103.4 (15) max	34.5
Oil separation 30 hrs	@100°C	% m		5 max	2.29

Properties			Method	MIL-G-21164D	Typical
Water resistance test loss	@40°C	% m		20 max	3.39
Evaporation loss 22 hrs	@100°C	% m		2.0 max	0.65
Low temperature torque - Starting	@-73°C	Nm		0.98 max	0.5
Low temperature torque - Running 1 hr	@-73°C	Nm		0.098 max	0.06
Anti-friction bearing performance	@121°C	hrs		1000 min	> 1000 (on all four runs)
Extreme pressure properties - load wear index				50 min	57.49
Copper corrosion 24 hrs	@100°C			1b max	1b
Rust Prevention / Bearing Protection 2 days	@52°C			Must pass	Passes, no corrosion
Storage Stability 6 months Unworked penetration	@40°C			200 min	226
Storage Stability 6 months Unworked penetration	@40°C			-	289
Storage Stability 6 months Change in penetration from original	@40°C			30 max	8
Colour				-	Dark grey

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**

  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**

  Advice on applications not covered here may be obtained from your Shell representative.