

ANDEROL PRODUCT DATA SHEET

ANDEROL® Bio Guard™ FRHF Series

High Performance Biodegradable Fire Resistant Hydraulic Fluids

GENERAL INFORMATION

The ANDEROL Bio Guard FRHF series are high performance biodegradable fire resistant hydraulic fluids. These synthetic polyolester based fluids have been specifically designed to meet the most stringent industry requirements, including spray flammability. In addition, the lubricants are readily biodegradable according to the OECD 301B standard. The formulations utilize ashless and silicon free additive technology. ANDEROL Bio Guard FRHF series are fully compatible with other mineral oils and polyol ester fluids.

TYPICAL PROPERTIES:

PROPERTIES	TEST METHOD	ANDEROL Bio Guard FRHF 46	ANDEROL Bio Guard FRHF 55	ANDEROL Bio Guard FRHF 68
ISO Viscosity Grade		46	55	68
Viscosity @ 40 °C, cSt	ASTM D-445	46	55	68
Viscosity @ 100 °C, cSt	ASTM D-445	9.4	11.4	11.8
Viscosity Index	ASTM D-2270	195	195	195
Specific Gravity @ 15.6 °C	ASTM D-4052	0.92	0.92	0.92
Pour Point, °C	ASTM D-97	-24	-21	-21
Flash Point, °C	ASTM D-92	> 310	>310	>310
Fire Point, °C	ASTM D-92	>360	>360	>360
Rust Test	ASTM D-665B	Pass	Pass	Pass
Copper Corrosion	ASTM D-130	1B	1B	1B
Biodegradability	OECD 301B	Pass	Pass	Pass
FM Approval Testing Spray Flammability Parameter (Less than 5×10^4)		←	Pass	→
Foam Sequence I (ml)	ASTM D-892	nil	nil	nil
Thermal Stability (168 hrs @ 135 °C)	ASTM D-2070			5%
Change in viscosity, %				-0.57
Change in TAN, mg KOH/g				
FZG Fail Stage, FV A/90/8.3	ASTM D-5182			11

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For more information please refer to the relevant Material Safety Data Sheet accompanying each product.

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APPLICATIONS

ANDEROL Bio Guard FRHF lubricants are highly recommended for hydraulic systems in high, low or broad temperature environments that require a greater degree of fire resistance than that offered by mineral fluids. These fluids are also suitable for applications where environmentally sensitive products are preferred (such as off-road construction vehicles and machinery).

ADVANTAGES

- Fire Resistant
- Ashless and Silicon Free
- Broad operating temperature range
- Environmentally friendly
- Extended lubrication cycles at all temperatures
- High fire point

COMPATIBILITY

ANDEROL Bio Guard FRHF series lubricants are compatible with elastomers, seals, and hoses generally used with conventional mineral oil based products. Care should be taken when converting systems containing phosphate ester or polyalkylene glycol fluids. Please contact the ANDEROL Technical Support Group for detailed conversion instructions.

APPROVALS

The ANDEROL Bio Guard FRHF lubricants pass the Vickers 104 C and the Vickers 35VQ 25A pump tests.

ANDEROL Bio Guard FRHF lubricants have successfully passed all tests for FM Approved products.

ABioGuardFRHF: 2/24/05 GMG



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