

# ANDEROL<sup>®</sup> BIO GUARD FRHF 46 and 68

HIGH PERFORMANCE BIODEGRADABLE FIRE RESISTANT HYDRAULIC FLUIDS (ISO VG 46 & 68)

## DESCRIPTION

ANDEROL<sup>®</sup> BIO GUARD FRHF 46 AND 68 are synthetic polyolester-based hydraulic fluids specifically designed to meet the most rigorous fire resistant requirements including spray flammability. In addition, the lubricants are readily biodegradable according to the OECD 301B standard.

## APPLICATIONS

ANDEROL<sup>®</sup> BIO GUARD FRHF 46 AND 68 are highly recommended for hydraulic systems in high, low or broad temperature range environments that require a greater degree of fire resistance than that offered by conventional mineral oil-based fluids. They are also suitable for applications where environmentally sensitive products are preferred such as off-road construction vehicles and machinery.

## FEATURES and BENEFITS

- Inherent high viscosity indices provide broad operating temperature range
- High flash point provides excellent fire resistance
- Ester-based, ashless and silicon-free fluid provides clean performance improving system reliability
- Excellent biodegradation and aquatic toxicity testing provides “eco-friendly” product
- Unique formulation provides excellent compatibility with other fire-resistant fluids allowing for easier changover procedure

## APPROVALS and SPECIFICATIONS

- Successfully passed the Factory Mutual Spray Flammability tests and meets FM Standard 6930
- Successfully passed the Vickers 104C and 35VQ 25A pump tests



## TYPICAL PROPERTIES:

PROPERTIES	TEST METHOD	ANDEROL® Bio Guard FRHF 46	ANDEROL® Bio Guard FRHF 68
Viscosity, cSt	ASTM D 445		
@40°C		46.9	65.3
@100°C		9.44	12.00
Viscosity Index	ASTM D 2270	192	183
Pour Point, °C	ASTM D 97	-45	-45
Flash Point, COC, °C	ASTM D 92	323	316
Fire Point, °C	ASTM D 92	378	374
Specific Gravity, 60°F (15.6°C)	ASTM D 4052	0.921	0.934
Copper Strip Corrosion, ASTM	ASTM D 130	1B	1B
Demulsibility @ 54°C, mL oil/water/emulsion (min)	ASTM D 1401	42/38/0 (<30)	43/37/0 (<30)
Foam Test, Sequence I, mL initial/mL final	ASTM D 892	0/0	0/0
Acid number, mg KOH/g,	ASTM D 664	0.72	1.29

## COMPATIBILITY

**ANDEROL® BIO GUARD FRHF 46** and **68** 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.

## PACKAGING

**ANDEROL® BIO GUARD FRHF 46** and **68** are available in 5-gallon pails and 55-gallon drums. Other packages may be available upon request.

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