SLFi Premium Fire-Resistant Hydraulic Fluids

Premium Fire-Resistant Hydraulic Fluids

SLFi's fire-resistant hydraulic fluids are formulated to provide excellent fire resistance as well as superior lubrication and protection. Switching to any of SLFi's fire-resistant hydraulic fluids does not require pump deration or extensive system modifications — an advantage not found with water-glycol formulations.

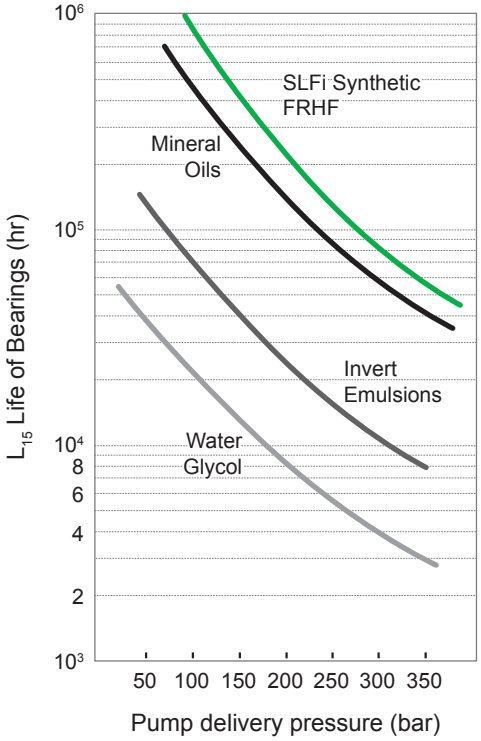
Fire Resistance

All of SLFi's fire-resistant hydraulic fluids have a very low burn efficiency (meaning it is highly ignition-resistant) and high flash point. SLFi's fire-resistant hydraulic fluids resist ignition when subjected to high-pressure hydraulic leaks, resulting in a significant reduction in fire hazard.

Unlike water-glycol-based formulations, SLFi's fire-resistant hydraulic fluids do not require constant monitoring to maintain fire resistance.

Wear Protection

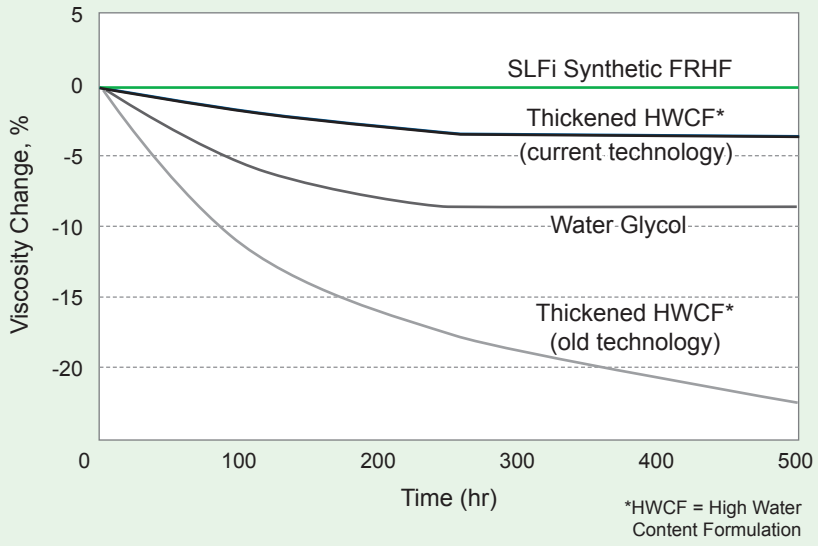
SLFi's line of fire resistant hydraulic fluids provide superior protection for pump components and bearings. Formulated with the highest quality synthetic base fluids and anti-wear additives, SLFi's line of synthetic fire-resistant hydraulic fluids resist pump cavitation and provide superior protection at high temperatures and pressures.



The poor load carrying capabilities of water-glycol fluids limit their ability to lubricate and protect, often requiring pump deration.

SLFi's fire-resistant hydraulic fluids offer superior wear protection, and pump deration is not required.

Shear Stability



Viscosity degradation due to shearing can significantly reduce a hydraulic fluid's ability to lubricate and protect. SLFi's fire-resistant hydraulic fluids are highly resistant to shear-related degradation, prolonging the excellent lubrication and protection they provide.

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Corrosion Resistance

Corrosion in systems running water-glycol-based hydraulic fluids typically is caused by water vapor. As a result, most water-glycol fluids use a vapor-phase rust inhibitor (food-grade water-glycol fluids have no vapor-phase rust inhibitors). Vapor-phase rust inhibitors are far less effective than liquid rust inhibitors and are subject to evaporative loss.

SLFi's fire-resistant hydraulic fluids offer excellent rust and corrosion protection that is far superior than that offered by vapor-phased rust inhibitors.

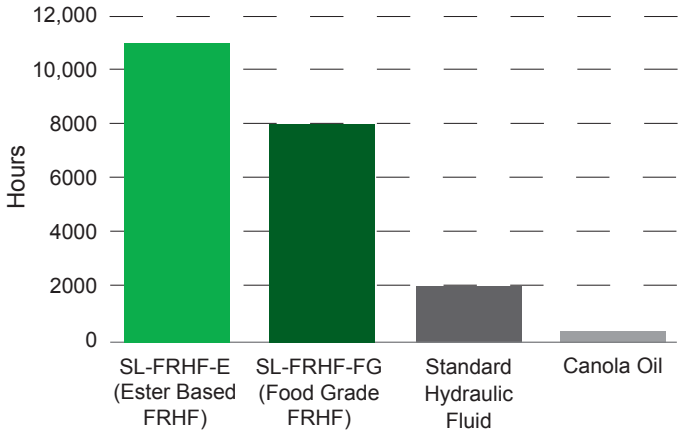
Energy Usage

Switching from a mineral oil to a water-glycol-based hydraulic fluid often results in increased energy usage due to increase pump cavitation and fluid leakage. SLFi's fire-resistant hydraulic fluids resist pump cavitation and leakage. This typically results in increased pump efficiency. Their superior wear protection also contributes to additional energy savings.

Oxidative Stability

SLFi's fire-resistant hydraulic fluids offer superior oxidative resistance, especially when compared to uncompleted-ester-based (vegetable-oil-based) fire-resistant hydraulic fluids and PAG-based fire-resistant hydraulic fluids. With their superior oxidative resistance, SLFi's fluids provide a longer fluid life even in extreme conditions.

Oxidative Stability (ASTM D-943)



Conversion Procedure

Converting to a water-glycol-based hydraulic fluid often requires extensive flushing procedures and system modifications. SLFi's fire-resistant hydraulic fluids are compatible with mineral-oil-based hydraulic fluids. Neither flushing or extensive system modifications are typically required.

Premium Fire-Resistant Hydraulic Fluids

Conversion Procedures

SLFi Synthetic Fire-Resistant Hydraulic Fluids	1. Drain reservoir. 2. Remove and replace all filters. 3. Refill reservoir. 4. Run system for 10 minutes. 5. Top off reservoir. 6. Perform standard fluid maintenance and oil analysis.
SLFi Water Glycol Hydraulic Fluids (Food-Grade)	1. Drain reservoir. 2. Drain pressure and return headers. 3. Remove and replace all filters. 4. Disconnect and drain each drop and hydraulic motor connection. 5. Reconnect all lines. 6. Flushing procedure: a. Fill reservoir 1/3 full with water-glycol hydraulic fluid. b. Run system for 10-15 minutes. c. Drain reservoir and store contaminated fluid. d. Drain pressure and return headers. e. Replace all filters (pressure and return). f. Disconnect and drain each drop and hydraulic motor connection. g. Remove reservoir clean-outs and wipe clean with lint-free rags. 7. Sample hydraulic fluid for mineral-oil contamination, flush again if necessary. 8. Refill system. 9. Run system for 10 minutes. 10. Top off reservoir. 11. Establish fluid sampling and maintenance schedule to verify viscosity and water concentration.
Synthetic PAG Hydraulic Fluids	1. Drain reservoir. 2. Drain pressure and return headers. 3. Remove and replace all filters. 4. Disconnect and drain each drop and hydraulic motor connection. 5. Reconnect all lines. 6. Flushing procedure: a. Fill reservoir 1/3 full with synthetic PAG fluid. b. Run system for 10-15 minutes. c. Drain reservoir and store contaminated fluid. d. Drain pressure and return headers. e. Replace all filters (pressure and return). f. Disconnect and drain each drop and hydraulic motor connection. g. Remove reservoir clean-outs and wipe clean with lint-free rags. 7. Sample hydraulic fluid for mineral-oil contamination, flush again if necessary. 8. Refill system. 9. Run system for 10 minutes. 10. Top off reservoir. 11. Perform standard fluid maintenance.

Premium Fire-Resistant Hydraulic Fluids

SL-FRHF-E: Ester Based Fire-Resistant Hydraulic Fluid

SL-FRHF-E is an ester-based fire-resistant hydraulic fluid that provides exceptional wear protection and fire resistance. Pump deration is not required when switching to SL-FRHF-E.

- Formulated to meet FM specifications for fire-resistant hydraulic fluids
- Very high flash point
- Excellent wear protection
- Pump deration not required
- Excellent corrosion and rust protection

Lubrication Properties	Test #	SL-FRHF-E
USDA Authorization	—	H-2
Viscosity Index	ASTM D-2270	139
Viscosity cSt @ 40°C	ASTM D-445	50.0
Viscosity cSt @ 100°C	ASTM D-445	8.2
Flash Point °F	ASTM D-92	550
Auto-Ignition Point °F	ASTM E-659-78	815
Pour Point °F	ASTM D-97	-45
Four Ball, 40kg, 1200 RPM, 167°F, 1 Hr, Scar Dia mm	ASTM D-4172	0.35
FZG (1760 RPM, 194°F, 40 kg Load, # Passes	DIN 51254	12+
Rust Test (Distilled Water/Sea Water)	ASTM D-665	PASS/PASS
Conradson Carbon Residue, % Weight	ASTM D-189	0.01
Demulsibility, 130°F, 30 Min	ASTM D-1401	40/38/2
Rexroth 1,100 Hr Endurance Test (2,600 RPM, 185°C, 380 bar)	MNF SPEC	PASS
Vickers 104C Vane Pump Test, mg Wear	ASTM D-2882	<5
Vickers 35VQ25	M-2950-S	PASS
Filter Requirements	—	Cellulose or Microglass
Copper Corrosion, 24 Hr	ASTM D-130	1a
Oxidation Inhibition (Turbine Oil Stability Test), Hr	ASTM D-943	>11,000

The information on SLFi and competitive products provided should only be used as a general guide. Lubricant properties are typical results and should not serve as a sole resource for determining the correct lubricant for a particular application. Please consult an SLFi representative to ensure that the product is the correct choice for the application.

Premium Fire-Resistant Hydraulic Fluids

SL-FRHF-FG: Food-Grade Fire-Resistant Hydraulic Fluid

SL-FRHF-FG is a food-grade fire-resistant hydraulic fluid that meets H1 requirements for incidental food contact. Pump deration is not required when switching to SL-FRHF-FG.

- Food-grade formulation, meets H1 requirements
- Formulated to meet FM specifications for fire-resistant hydraulic fluids
- Excellent wear protection
- Pump deration not required
- Excellent corrosion and rust protection

Lubrication Properties	Test #	SL-FRHF-FG
USDA Authorization	—	H-1 (136289)
Viscosity Index	ASTM D-2270	115
Viscosity cSt @ 40°C	ASTM D-445	50.0
Viscosity cSt @ 100°C	ASTM D-445	7.5
Flash Point °F	ASTM D-92	475
Auto-Ignition Point °F	ASTM E-659-78	740
Pour Point °F	ASTM D-97	-44
Four Ball, 40kg, 1200 RPM, 167°F, 1 Hr, Scar Dia mm	ASTM D-4172	0.35
FZG (1760 RPM, 194°F, 40 kg Load, # Passes	DIN 51254	12+
Rust Test (Distilled Water/Sea Water)	ASTM D-665	PASS/PASS
Conradson Carbon Residue, % Weight	ASTM D-189	0.01
Demulsibility, 130°F, 30 Min	ASTM D-1401	40/40/0
Rexroth 1,100 Hr Endurance Test (2,600 RPM, 185°C, 380 bar)	MNF SPEC	PASS
Vickers 104C Vane Pump Test, mg Wear	ASTM D-2882	<5
Vickers 35VQ25	M-2950-S	PASS
Filter Requirements	—	Cellulose or Microglass
Copper Corrosion, 24 Hr	ASTM D-130	1a
Oxidation Inhibition (Turbine Oil Stability Test), Hr	ASTM D-943	>10,000

The information on SLFi and competitive products provided should only be used as a general guide. Lubricant properties are typical results and should not serve as a sole resource for determining the correct lubricant for a particular application. Please consult an SLFi representative to ensure that the product is the correct choice for the application.

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