

ULTRA-KLEEN™ XPL FRHF

 Lubricants for a Healthier Planet™

Ultra-Kleen™ XPL FRHF is a food grade hydraulic fluid designed to replace mineral oil-based anti-wear hydraulic fluids in applications with fire hazards or environmental concern. Formulated with renewable biosynthetic esters and non-toxic additives, **Ultra-Kleen XPL FRHF** provides maximum wear protection for extended asset life and the ultra-high viscosity index delivers improved hydraulic efficiency and productivity. The readily biodegradable fluid has low aquatic toxicity and will not bioaccumulate, minimizing the environmental damage and cleanup expense for an accidental release.

Ultra-Kleen XPL FRHF is FM Approved per Standard 6930 for enhanced safety in applications with potential fire hazards.

All ingredients in **Ultra-Kleen XPL FRHF** are listed substances generally recognized as safe (GRAS) or substances used in accordance with the provisions of a prior sanction or approval permitted under the rules of the U.S. Food and Drug Administration 21 CFR 178.3570 for lubricants with incidental food contact.

NSF Nonfood Compounds H1 Registered: No. 171651



Ultra-Kleen XPL FRHF Meets or Exceeds:

FM Approval Standard 6930	ISO 6743-4 HFDU	ISO 12922 HFDU	ISO 15380 HEES
EPA Vessel General Permit	ASTM D8029	DIN 51502 HFDU	

Compatibility Notes: Compatible with most hydrocarbon-based, phosphate ester, and polyol ester fluids including Quintolubric 888; not miscible or compatible with water-containing fluids. Compatible with most common ferrous and non-ferrous metals and alloys. Compatible with epoxy coatings, but limited compatibility with hot-dipped and electrogalvanized coatings and oil-based paints. Elastomer compatibility is noted in the table below, with compatible elastomers shaded green and non-compatible elastomers shaded red. Contact your Hydrotex representative for more information on materials compatibility and best practices for fluid conversion.

Compatible Elastomers	Non-Compatible Elastomers
NBR- Buna N, Nitrile Butadiene, nitrile content >25%	EPR/EPDM- Ethylene propylene rubber
FKM2- Fluoroelastomers, Viton®	NP- Neoprene, Polychloroprene
PTFE- Polytetrafluoroethylene, Teflon®	IIR- Butyl rubber, Isobutylene Isoprene
AU- Polyurethane	

PRODUCT ATTRIBUTE	TEST METHOD	TYPICAL PROPERTIES
ISO Grade	ASTM D2422	46
Density, g/ml @ 15.5°C	ASTM D1298	0.919
Density, lb/gal @ 60°F	ASTM D1298	7.67
Kinematic Viscosity, cSt @ 40°C	ASTM D445	46.5
Kinematic Viscosity, cSt @ 100°C	ASTM D445	9.4
Viscosity Index	ASTM D2270	192
Dynamic Viscosity, cP @ 0°C	ASTM D7042	300
Dynamic Viscosity, cP @ -10°C	ASTM D7042	550
Dynamic Viscosity, cP @ -20°C	ASTM D7042	1300
Dynamic Viscosity, cP @ -30°C	ASTM D7042	3750
Pour Point, °F (°C)	ASTM D97	-49 (-45)
Flash Point, °F (°C)	ASTM D92	> 572 (300)
Fire Point, °F (°C)	ASTM D92	> 680 (360)
4-Ball Wear, scar diameter, mm	ASTM D2266	0.49
V104C Pump Wear, wt. loss vanes, mg	ASTM D7043	< 5
FZG Scuffing, A/8.3/90, Fail Stage	ASTM D5182	12+
TOST Oxidation Stability, hrs	ASTM D943	2000+
KRL Shear Stability, % visc. loss after 20hr	CEC L-45-A-99	<1
Copper Corrosion, 3 hr @ 121°C	ASTM D130	1B
Rust Test, Distilled Water	ASTM D665A	Pass
Rust Test, Syn. Sea Water	ASTM D665B	Pass
Water Separability, min @ 54°C	ASTM D1401	15
Foam, Blow/Settle ml/ml, Seq. I, II, III	ASTM D892	pass
Air Release, min @ 50°C	ASTM D3427	2.5
Nitrile Elastomer Compatibility	ASTM D471	SRE-NBR 1 @ 100°C for 168hr
- Volume Change, %		6.5
- Shore A Hardness Change, %		-5.9
Viton Elastomer Compatibility	ASTM D471	FKM 2 @ 95°C for 1008hr
- Volume Change, %		0.2
- Shore A Hardness Change, %		-4.5
Biodegradability, %	OECD 301B	> 60
Renewable Content, %	ASTM D6866	> 90
Appearance, @ 25°C		Clear & Bright

WARRANTY:

When properly stored and used in accordance with instructions, any material not satisfactory will be replaced with any product in our line on a dollar for dollar basis provided the account is paid in full when due and Hydrotex is notified in writing within 12 months of the date of the order by the customer.

Hydrotex® is a manufacturer and distributor of high performance lubricant and fuel improver solutions. As an employee owned company, we help our customers develop sustainable solutions designed to improve system reliability, save energy, limit pollution, extend fixed asset life, reduce maintenance costs and improve fuel efficiency. Our products and services leverage over 80 years of innovation resulting in superior lubrication solutions and high touch customer service.