



FUTERRA™ SERIES

High Performance, Ecolabel Certified Hydraulic Fluids

The FUTERRA™ Hydraulic Fluid (HF) Series is the first of its kind. These renewable hydrocarbon-based environmentally acceptable lubricants (EALs) are designed to withstand extreme conditions and corrosion while operating in severe outdoor environments. These lubricants are intended for severe service, extreme high temperature (250°F/121°C), low temperature (-40°F/-40°C) and high pressure (5000+psi/34,470 kPa) applications. Meets the technical requirements of ISO 15380.

Its excellent oxidative and hydrolytic stability and near zero foaming tendency ensure that the fluids will last much longer than other EALs and conventional oils. FUTERRA™ offers greater flexibility and the ultimate system compatibility – offering drop-in replacement and broad seal compatibility. The FUTERRA™ HF Series was specially designed for demanding applications where incidental environmental exposure of the lubricant is a cause for concern.

- Ecolabel Certified
- 2013 EPA VGP Compliant
- Non-sheening¹
- Drop-in replacement for mineral oil based lubricants

Typical Properties		FUTERRA™ HF Series			
FUTERRA™ Product Number		HF 32	HF 46	HF 68	HF 100
ISO Viscosity Grade		32	46	68	100
Kinematic Viscosity, ASTM D445, cSt	@ 40°C	32	46	68	100
	@ 100°C	5.98	7.98	10.8	14.9
Viscosity Index, ASTM D2270		127	140	152	154
Specific Gravity 15.6°C (60°F), ASTM D1298		0.837	0.837	0.841	0.845
Density 15.6°C (60°F), lbs/gal		6.97	6.97	7.01	7.04
Pour Point, ASTM D97, °C		-51	-51	-51	-51
Flash Point (COC), ASTM D92, °C		226	226	238	234
Acid Number, mg KOH/g, ASTM D664		0.89	0.89	0.89	0.89

Performance Properties		FUTERRA™ HF Series			
FUTERRA™ Product Number		HF 32	HF 46	HF 68	HF 100
Steel Pin Corrosion (3 hours, 100°C), ASTM D665	Distilled Water	Pass	Pass	Pass	Pass
	Synthetic Sea Water	Pass	Pass	Pass	Pass
Foam Properties (after 10 minutes), ASTM D892	Sequence I, Tendency/Stability	0/0	0/0	0/0	0/0
	Sequence II, Tendency/Stability	10/0	10/0	10/0	10/0
	Sequence III, Tendency/Stability	0/0	0/0	0/0	0/0

¹CFR40 Part 435B

Performance Properties (cont.)		FUTERRA™ HF Series			
FUTERRA™ Product Number		HF 32	HF 46	HF 68	HF 100
Demulse Properties (54°C), ASTM D1401	Oil/Water/Emulsion	40/40/0	40/40/0	40/40/0	40/40/0
	Minutes	10	10	10	10
Copper Corrosion, ASTM D130, 3hrs @ 100 °C		1a	1a	1a	1a
Oxidation, ASTM D2272, Minutes to 25 psi Loss		1,200	1,200	1,200	1,200
Oxidation, ASTM D943		> 1,000 hrs	> 1,000 hrs	> 1,000 hrs	> 1,000 hrs
Oxidation, ASTM D943M		9,000 hrs	9,000 hrs	9,000 hrs	9,000 hrs
FZG, 10 min.		11	12	12	12
Hydrolytic Stability, ASTM D2619	Copper Weight Loss, mg/cm3	0.00	0.00	0.00	0.00
	Acidity of Water Layer, mgKOH/g	< 4.0	< 4.0	< 4.0	< 4.0
	Appearance of Copper Panel	1b	1b	1b	1b
Vickers 35VQ25 Vane Pump		Pass	Pass	Pass	Pass
Vickers V104C Vane Pump		Pass	Pass	Pass	Pass
Denison T6H20C Pump (HF-1, HF-2, HF-6)		Pass	Pass	Pass	Pass
Biodegradability, % in 28 Days, OECD 301B		> 60	> 60	> 60	> 60
Ecotoxicity	Algae, 72h EC50, ppm, OECD 201	> 10,000	> 10,000	> 10,000	> 10,000
	Daphnia magna, 48h EC50, ppm, OECD 202	> 10,000	> 10,000	> 10,000	> 10,000
	Fathead minnow, 96h LC50, ppm, OECD 203	> 1,000	> 1,000	> 1,000	> 1,000
Elastomer Compatibility	SRE-NBR-1 (80°C, 1000 hours)	Pass	Pass	Pass	Pass
	HNBR (100°C, 1000 hours)	Pass	Pass	Pass	Pass
	FKM (100°C, 1000 hours)	Pass	Pass	Pass	Pass

EWC / German waste code 13 01 12*

OEM Approvals

FUTERRA™ HF Series meets the requirements for an extensive list of original equipment manufacturers. Please contact customer service for a full list of OEM approvals.



For more information about RSC Bio Solutions, visit us at rscbio.com or call +1 704.684.6100.