Renewable Lubricants, Inc.
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Bio-MIL-PRF-32073 Hydraulic Fluid

(ISO 15, 22, 32, 46, 68)

Bio-MIL-PRF-32073 Hydraulic Fluids are readily biodegradable lubricants designed to replace mineral oil-based hydraulic fluids in environmentally sensitive applications. Formulated to meet the performance and seal swell requirements of MIL-PRF-32073, these fluids are engineered for excellent anti-wear, anti-foam, anti-rust, and oxidation resistance. Enhanced with Stabilized™ HOBS (High Oleic Base Stock) technology, they deliver exceptional high- and low-temperature performance, high viscosity index, and increased flash/fire safety—all without harmful zinc or chlorine additives.

Benefits

- Readily biodegradable, environmentally non-toxic, not bioaccumulative
- Meets MIL-PRF-32073 with required 10-30% seal swell
- High viscosity index provides multi-grade synthetic-like performance
- Enhanced shear stability and cold-temperature pumpability (to -40°C)
- Excellent demulsibility, anti-wear, and corrosion protection
- Zinc-free and ashless additive system meets high-pressure pump specs
- Exceeds EPA 2013 VGP requirements for Environmentally Acceptable Lubricants (EALs)
- Compatible with vane, piston, and gear-type pumps in mobile and stationary systems

Application / New Filling

- Suitable for:
  - Ground support equipment (MIL-PRF-5606 replacement, ISO 15/22)
  - Stationary/mobile hydraulic equipment in environmentally sensitive areas
  - Systems requiring ashless GL-1, GL-2, GL-3, and AGMA Non-EP gear oils
- Designed for equipment operating in extreme environments:
  - Moisture, surge loads, dusty, or low-temperature conditions

Specifications and Approvals

- MIL-PRF-32073 Compliant
- ASTM D-5864: Ultimate Biodegradable
- OECD 301 Readily Biodegradable
- FZG Load Stage 10 (DIN 51354)
- Meets US Steel 126, 127, 136 specs
- Compatible with ISO 15380 (HEES/HETG)
- EPA VGP 2013 (EAL Compliant)
- Patented Stabilized™ HOBS formula (US Patents 6,383,992 & 6,534,454)

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The test data below shows that the Bio-MIL-PRF-32073 Hydraulic Fluids provide high performance in a wide variety of stationary and transportation equipment that operate in broad ranges of environmental conditions. In equipment operating outside, wear from poor cold temperature pumpability, surge loads, moisture, and dusty environments are more prominent. Bio-MIL-PRF-32073 Hydraulic Fluids are formulated to improve performance in equipment that requires excellent anti-wear, rapid water separation and cold temperature pumpability as low as -40^{0}C. In addition, the products may be used in machine tool hydraulic systems where higher seal swell fluids are required because of previously used MIL-Spec hydraulic Fluids.

TYPICAL SPECIFICATIONS (MIL-PRF-32073A)	ISO Grade Military Grade	**ISO 15** **1**	**ISO 22 2**	**ISO 32** **3**	**ISO 46** **4**	**ISO 68 5**
Viscosity @ 40°C, cSt	ASTM D-445	**14.18**	**21.1**	**30.87**	**43.8**	**64.1**
Viscosity @ 100°C, cSt	ASTM D-445	**3.81**	**5.0**	**6.9**	**9.67**	**12.5**
Viscosity @ -15°C, cSt	ASTM D-445	**170**	**330**	**479**	**595**	**1160**
Viscosity @ -25°C, Brookfield	ASTM D-2983	**314 cP**	**646 cP**	**970 cP**	**1260 cP**	**2610 cP**
Viscosity @ -30°C Brookfield	ASTM D-2983	**480 cP**	**1020 cP**	**1530 cP**	**2040 cP**	**4800 cP**
Viscosity @ -35°C Brookfield	ASTM D-2983	**750 cP**	**1680 cP**	**2490 cP**		
Viscosity @ -40°C Brookfield	ASTM D-2983	**1250 cP**	**2800 cP**	**4250 cP**		
Viscosity Index	ASTM D-2270	**172**	**175**	**189**	**201**	**198**
Pour Point	ASTM D-97	**-60°C**	**-52°C**	**-48°C**	**-39°C**	**-36°C**
Flash Point (COC)	ASTM D-92	**180°C**	**205°C**	**243°C**	**252°C**	**263°C**
Foam Sequence I, II, III (10 min)	ASTM D-892	**<30/0 Foam**	**<30/0 Foam**	**<30/0 Foam**	**<30/0 Foam**	**<30/0 Foam**
Galvanic Corrosion	FTM 791-5322	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**
Rust Prevention Distilled Water	ASTM D-665					
Syn. Sea Water		**Pass**	**Pass**	**Pass**	**Pass**	**Pass**
		Pass	**Pass**	**Pass**	**Pass**	**Pass**
Copper Corrosion Strip 3hr @ 100°C	ASTM D-130	**1A**	**1A**	**1A**	**1 A**	**1 A**

Rotary Bomb Oxidation, (minutes)	ASTM D-2272	**400**	**400**	**400**	**400**	**400**
Dielectric Strength (KV) (Avg)	ASTM D-877	**50**	**45**	**45**	**45**	**45**
Oxidation Stability, Pressure Differential Scanning Calorimeter PDSC (minutes)	ASTM D-6186 Modified	**95.0 (155°C)** **25.0 (180°C)**	**95.0 (155°C)** **25.0 (180°C)**	**90.0 (155°C)** **25.0 (180°C)**	**90.0 (155°C)** **25.0 (180°C)**	**90.0 (155°C)** **25.0 (180°C)**
Neutralization Number mg KOH/g	ASTM D-974	**<0.4**	**<0.4**	**<0.4**	**<0.4**	**<0.4**
Seal Swell NBR-L, % (Avg.) Volume Change (%)	FTM-791-3603	**20**	**20**	**13**	**13**	**13**
Filterability A-No Water (s) (Avg) B-2% Water (s) (Avg)	Denison TP 02100 HF-0 Requirement	 **113** **187**	 **268** **271**	 **335** **449**	 **355** **470**	 **355** **470**
Demulsibility, ML Oil/Water/Emulsion	ASTM D-1401	**40/ 40/ 0** **(<10 minutes)**	**40/ 40/ 0** **(<10 minutes)**	**40/ 40/ 0** **(<10 minutes)**	**40/40/0** **(<10 minutes)**	**40/40/0** **(<10 minutes)**
4-Ball Wear, 1h, 167°F, 1200 RPM, 40 kg	ASTM D-4172	**.30-.40**	**.30-.40**	**.30-.40**	**.03-.40**	**.30-.40**
FZG Test	DIN 51354	**11**	**11**	**12**	**12**	**12**
Biodegradation Classification	ASTM D-5864 OECD 301B ISO 15380	Ultimate PW1 Readily yes	Ultimate PW1 Readily yes	Ultimate PW1 Readily yes	Ultimate PW1 Readily yes	Ultimate PW1 Readily yes
Environmentally Friendly						
USDA Biobased Tested	New Carbon	yes	yes	yes	yes	yes
Environmental Management System	ISO 14001	yes	yes	yes	yes	yes
Ecotoxicity LC-50 / EC-50	**EPA 560/6-82-002, 003**	meets/exceeds	meets/exceeds	meets/exceeds	meets/exceeds	meets/exceeds
Product Item #		**81140**	**81150**	**81160**	**81170**	**81180**

ISOGREEN CERTIFIED LUBRICANTS

F.O.B: Hartville, Ohio

Availability: 1 Gallon, 5 Gallon Pail, Drum, Totes, Bulk

STABILIZED ™ by Renewable Lubricants