

BioMax Hydraulic EAL

ENVIRONMENTALLY ACCEPTABLE HYDRAULIC LUBRICANT

Royal Purple's BioMax Hydraulic EAL carries the Ecolabel certification identifying it as an Environmentally Acceptable Lubricant, recognized world-wide. This high performance lubricant is specifically formulated for those users of hydraulics in marine applications and environmentally sensitive areas such as hydraulic systems in mobile equipment for mining/construction, forestry, waterparks etc. The Ecolabel certification fully guarantees that BioMax meets all lubricant requirements of the 2013 Vessel General Permit (VGP).

Environmentally-friendly lubricants often compromise performance and durability in order to meet biodegradability and toxicity requirements. BioMax Hydraulic EAL provides uncompromised lubrication and protection for all hydraulic components requiring the use of an Environmentally Acceptable Lubricant. The performance advantage over competing oils is due to BioMax's superior formulation, using the highest quality synthetic base stocks and Royal Purple's proprietary Synerlec[®] additive technology. This unique, synthetic additive is proven to provide lasting protection and optimized efficiency.



PERFORMANCE ADVANTAGES

- HIGH FILM STRENGTH - Synerlec[®] additive technology dramatically reduces metal-to-metal contact, friction, and wear
- EXCEPTIONAL CORROSION & RUST PROTECTION - Prevents internal damage to equipment from chemical attack
- SUPERIOR OXIDATION & THERMAL STABILITY - Resists oil degradation and varnish formation for longer oil life
- OUTSTANDING SYSTEM PERFORMANCE - Provides a wide operating temperature range and excellent shear stability
- EXCELLENT DEMULSIBILITY - Rapidly separates from water, allowing free water to be drained from the system
- OUTSTANDING ELASTOMER COMPATIBILITY - Will not harm seals designed for use with lubricating oils

SPECIFICATIONS AND APPROVALS

- HS Marine (BioMax Hydraulic EAL 46)
- ISO 15380
- DIN 51524 Part 2
- Fives Cincinnati P-68, P-69, P-70

Typical Physical Properties					
Property	Test Method	22	32	46	68
Viscosity @ 0°C, cSt	ASTM D445	168.70	284.90	445.70	720.20
Viscosity @ 40°C, cSt	ASTM D445	22.00	32.00	48.00	68.00
Viscosity @ 100°C, cSt	ASTM D445	4.86	6.19	8.13	10.70
Viscosity Index	ASTM D2270	158	159	159	159
Density @15°C, g/ml	ASTM D4052	0.908	0.859	0.869	0.863
Demulsibility, ml/ml/ml	ASTM D1401	40/40/0	42/38/0	42/38/0	42/38/0
Copper Corrosion	ASTM D130	1A	1A	1A	1A
Rust Prevention, Dist. Water	ASTM D665A	PASS	PASS	PASS	PASS
Rust Prevention, Sea Water	ASTM D665B	PASS	PASS	PASS	PASS
Elastomer Compatibility	ISO 6072	PASS	PASS	PASS	PASS
Pour Point, °C (°F)	ASTM D97	-63 (-81)	-60 (-76)	-60 (-76)	-45 (-49)
Flash Point, °C (°F)	ASTM D92	246 (475)	233 (451)	233 (451)	231 (448)
Foam Tendency, Seq. I, II, III	ASTM D892	0/0	0/0	0/0	0/0
Dielectric Breakdown, kV	ASTM D877	43	48	49	47
Four-Ball Wear, mm	ASTM D4172	0.49	0.47	0.48	0.49
Four-Ball EP, LWI	ASTM D2783	37.6	54.2	56.9	57.4
Four-Ball EP, Weld Load, kg	ASTM D2783	200	200	250	250
FZG Gear Test, A/8.3/90	ASTM D5182	>12	>12	>12	>12
Biodegradability, % (28 days)	OECD 301B	>60	>60	>60	>60
Toxicity (Algae), mg/L	OECD 201	>1000	>1000	>1000	>1000
Toxicity (Daphnia), mg/L	OECD 202	>1000	>1000	>1000	>1000
Toxicity (Fish), mg/L	OECD 203	>1000	>1000	>1000	>1000
Toxicity (Bacteria), mg/L	OECD 209	>1000	>1000	>1000	>1000
Bioaccumulation, log POW	OECD 107	<3	<3	<3	<3

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