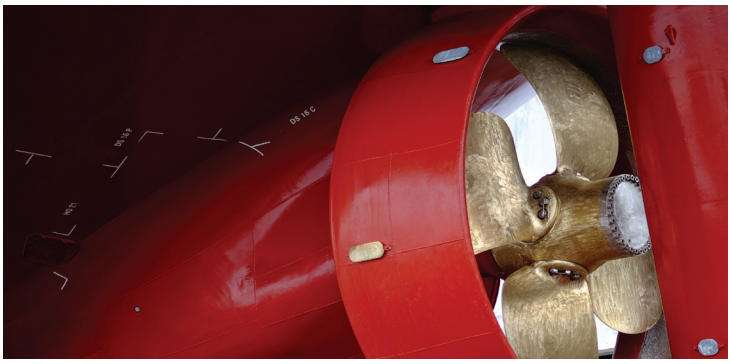
BIOMAX™ HYDRAULIC EAL

SYNTHETIC ENVIRONMENTALLY ACCEPTABLE HYDRAULIC LUBRICANT
WITH SYNERLEC®

The BioMax™ EAL product line consists of environmentally friendly, synthetic, high-performance lubricants designed for equipment operating in environmentally sensitive areas. While many environmentally acceptable lubricants sacrifice performance and durability to meet regulatory requirements, BioMax EALs deliver uncompromised protection for all lubricated components.

BioMax Hydraulic EAL is recommended for use in any hydraulic or circulating oil system requiring an environmentally acceptable lubricant. As operating loads and duty cycles increase – and oil volumes decrease – hydraulic and circulating oils face greater stress, often leading to equipment wear and thermal degradation. Under these severe conditions, BioMax Hydraulic EAL provides enhanced lubrication, superior wear protection, and resistance to deposit formation – helping improve system efficiency and reliability.

Unlike conventional mineral and synthetic oils, BioMax Hydraulic EAL combines premium synthetic base oils with our proprietary Synerlec® additive technology to deliver unmatched performance. Proven in demanding applications, this advanced formulation helps equipment run smoother, cooler, quieter, and more efficiently – resulting in longer service life, greater reliability, and reduced maintenance demands.



BE/027/007

EU Ecolabel
www.ecolabel.eu

PROPRIETARY ADDITIVE TECHNOLOGY – SYNERLEC®

Synerlec® additive technology forms a tough, slippery film that bonds ionically to metal surfaces, increasing oil film thickness beyond what viscosity alone can provide. This reinforced film greatly reduces the likelihood of breach, preventing metal-to-metal contact even under severe operating conditions where ordinary lubricants would fail. Because Synerlec allows a lubricant to carry significantly higher loads than other mineral and synthetic oils, it delivers extra protection for bearings exposed to misalignment, shaft flex, high temperatures, imbalance, or water contamination – factors that typically thin oil films. In addition, Synerlec can smooth metal surfaces already damaged by wear by gently micro-mending surface asperities.

PERFORMANCE & OTHER ADVANTAGES

HIGH FILM STRENGTH & OUTSTANDING WEAR PROTECTION – Dramatically reduces metal-to-metal contact, friction and wear, providing exceptional protection of hydraulic components.

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.

EXCELLENT DEMULSIBILITY – Rapidly separates from water, allowing free water to be drained from the system.

EXCELLENT HYDROLYTIC STABILITY – Resists breakdown and acidity due to water contamination.

IMPROVED SYSTEM PERFORMANCE – Lowers operating temperatures and improves efficiency.

SMALLER CARBON FOOTPRINT – Minimizes waste generation, energy consumption, and CO_2 output by extending oil change intervals.

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TYPICAL APPLICATIONS & INDUSTRIES

- Inland waterways and offshore marine equipment including vessel thrusters, controllable pitch propellers (CPPs) and deck machinery
- Mobile and stationary equipment
- Wind turbine and other power generation equipment
- Construction
- Forestry
- Marine
- Mining
- Waterparks and water treatment facilities
- Wind energy

CERTIFICATIONS

- Ecolabel License No. BE/027/007
- US EPA VGP 2013 and VIDA

PERFORMANCE REQUIREMENTS MET OR EXCEEDED

- Atlas Corp Co. (ISO VG 32)
- Carco (ISO VG 46, 68)
- HS Marine (ISO VG 46)
- ISO 15380 category HEPR
- DIN 51524 Part 2
- Fives Cincinnati P-68, P-69, P-70

TECHNICAL DATA

ISO Grade	22	32	46	68
Color	Amber	Amber	Amber	Amber
Relative Density @ 60°F/60°F, ASTM D1298	0.905	0.855	0.861	0.862
Viscosity @ 100°C cSt, ASTM D445	4.75	6.25	8.25	11.3
Viscosity @ 40°C cSt, ASTM D445	22	32	46	68
Viscosity @ 0°C, cSt, ASTM D445	168.7	284.9	445.7	720.2
Viscosity Index ASTM D2270	140	150	155	160
Flash Point °C (°F), (COC), ASTM D92	246 (475)	233 (451)	233 (451)	231 (448)
Pour Point °C/°F, ASTM D97	-45 (-49)	-39 (-38)	-39 (-38)	-39 (-38)
Rust Test 4 hrs @ 60°C, DI H2O, ASTM D665A	PASS	PASS	PASS	PASS
Rust Test 4 hrs @ 60°C, Sea H2O, ASTM D665B	PASS	PASS	PASS	PASS
Copper Corrosion 3 hrs @ 100°C, ASTM D130	1A	1A	1A	1A
Elastomer Compatibility ISO 6072	PASS	PASS	PASS	PASS
FZG Scuffing A/8.3/90, Fail Stage, ISO 14635-1	>12	>12	>12	>12
Vane Pump Wear Ring mg, ISO 20763	2	2	2	2
Vane Pump Wear Vanes mg, ISO 20763	1.5	1.5	1.5	1.5
Four-Ball EP Weld Point kgf, ASTM D2783	200	200	250	250
Four-Ball EP Load Wear Index kgf, ASTM D2783	37.6	54.2	56.9	57.4
Four-Ball Wear @ 75°C, 1200 rpm, 40 kgf, 60 minutes, mm wear, ASTM D4172	0.49	0.47	0.48	0.49
Emulsion Characteristics @ 54°C, oil/water/emulsion-minutes, ASTM D1401	-	37/40/3-15	39/40/1-25	40/40/0-30
Foaming Characteristics 3 sequences @ 24°C, 93.5°C, 24°C: tendency/stability (ml)-time to break (sec), ASTM D892	0/0-0, 0/0-0, 0/0-0	0/0-0, 0/0-0, 0/0-0	0/0-0, 0/0-0, 0/0-0	0/0-0, 0/0-0, 0/0-0
Biodegradability % (28 days), ASTM D7373	>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, OCED 209	>1000	>1000	>1000	>1000
Bioaccumulation log POW, OECD 107	<3	<3	<3	<3
Air Release ASTM D3427	0	<4	<7	<10
Dielectric Breakdown kV, ASTM D887	43	48	49	47

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