

TYPICAL PROPERTIES

EAL GEAR OIL

TYPICAL PROPERTIES*	METHOD	ISO GRADE					
		100	150	220	320	460	680
Density @ 15° C	D4052	0.901	0.9242	0.9451	0.9204	0.9333	0.9477
Viscosity	D445						
cSt @ 40°C		100	150	220	320	460	680
cSt @ 100°C		14.97	20.24	29.38	34.72	45.81	56.84
Viscosity Index	D2270	147	150	154	151	155	158
Flash Point, °F	D92	474	474	490	470	474	480
Pour Point, °C	D97	-48	-48	-45	-33	-33	-30
Copper Corrosion Test 3 hours @ 100°C	D130	1A	1A	1A	1A	1A	1A
Steel Corrosion Test	D665B	No Rust	No Rust	No Rust	No Rust	No Rust	No Rust
Elastomer Compatibility	DIN 51517 SRE-NBR	PASS	PASS	PASS	PASS	PASS	PASS
Demulsibility Test @ 180°F	D1401	40/40/0 (20)	40/40/0 (20)	44/39/0 (20)	43/37/0 (25)	43/37/0 (25)	43/37/0 (15)
Foam Characteristics (at end of 10-min settling period)							
Seq I	D892	0/0	0/0	0/0	0/0	0/0	0/0
Seq II		0/0	0/0	0/0	0/0	0/0	0/0
Seq III		0/0	0/0	0/0	0/0	0/0	0/0
Oxidation Characteristic, 312 hours at 95 °C, Viscosity increase at 100 °C	D2893	0.14%	0.51%	0.46%	0.58%	0.20%	0.26%
Load Wear Index, kg	D2783	51.70	55.20	57.63	55.81	56.23	56.84
Weld Load, kgf	D2783	250	315	315	315	315	315
Last Non-Seizure, kgf	D2783	80	100	100	100	100	100
Biodegradability	OECD 301B	> 60%	> 60%	> 60%	> 60%	> 60%	> 60%

*Properties are typical and may vary

EAL HYDRAULIC OIL

TYPICAL PROPERTIES*	METHOD	ISO GRADE				
		22	32	46	68	100
Density @ 15° C	D4052	0.9131	0.8774	0.8790	0.8920	0.8968
Viscosity	D445					
cSt @ 40°C		22	32	46	68	100
cSt @ 100°C		4.90	5.95	8.10	10.70	14.60
Viscosity Index	D2270	131	131	140	140	145
Pour Point, °C	D97	-57	-54	-51	-51	-51
Flash Point, °F	D92	494	424	440	440	434
Demulsibility Test @ 130°F	D1401	40/40/0 (5)	40/40/0 (10)	40/40/0 (15)	40/40/0 (15)	40/40/0 (15)
Copper Corrosion Test 3 hours @ 100°C	D130	1A	1A	1A	1A	1A
Steel Corrosion Test	D665	No Rust	No Rust	No Rust	No Rust	No Rust
Elastomer Compatibility	ISO 15380	PASS	PASS	PASS	PASS	PASS
Biodegradability	OECD 301B	> 60%	> 60%	> 60%	> 60%	> 60%

*Properties are typical and may vary

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PART NUMBER

11857

PERFORMANCE THAT OUTPERFORMS

Founded in 1986, Royal Purple is recognized as a leading manufacturer of synthetic lubricants, oils, and greases for consumer and industrial based applications. Royal Purple's development of a unique proprietary additive technology, called Synerlec®, fortifies lubricants with unusually high film strength capable of better protecting bearings, gears and other lubricated components under extreme loads. This specialized technology also provides exceptional oxidation stability for long oil life while providing rust and corrosion protection in both wet and high temperature applications.

TOUGH JOBS REQUIRE TOUGH SOLUTIONS

EPA 2013 VGP regulations for marine vessels require the use of EAL's (Environmentally Acceptable Lubricants) in all oil-to-sea interfaces. Royal Purple's in house expert R&D team has developed BIOMAX™ EAL GEAR OIL and BIOMAX™ EAL HYDRAULIC OIL to meet these needs.

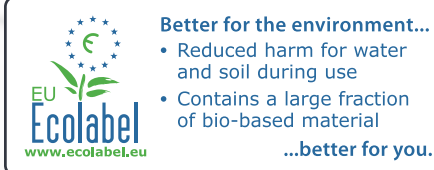
BioMax EAL lubricants provide excellent performance for use in sensitive environments such as thrust gears, steering gears, stern lube and other marine related services. The long life and high film strength of BioMax greatly increases equipment reliability as well as providing excellent protection in highly corrosive environments. It gains its superior performance advantage over competing oils through its powerful blend of base oils plus our proprietary Synerlec additive technology, that is proven to make bearings and equipment run smoother, cooler, quieter, longer and more efficiently.

Royal Purple's Biomax lubricants are readily biodegradable, have low-toxicity and low bioaccumulation, and feature bio-renewable materials, in addition to providing superior lubrication and protection for equipment.

BIOMAX™

High Performance EAL Gear & Hydraulic Oil

EU Ecolabel : BE/027/004



BioMax EAL Gear Oil Ecolabel Approved

EAL GEAR OIL & HYDRAULIC OIL

Royal Purple's BioMax EAL Gear Oils & Hydraulic Oils are environmentally acceptable, high performance lubricants formulated for those users of gear oil and hydraulic oil products in marine applications affected by the 2013 Vessel General Permit (VGP).

BioMax EAL Gear Oils & Hydraulic Oils provide excellent performance for use in sensitive environments such as thrust gears, steering gears, stern tube and other marine related services.

The long life and high film strength of BioMax EAL Gear Oils & Hydraulic Oils greatly increases equipment reliability as well as provide excellent protection in highly corrosive environments. It gains its performance advantage over competing oils through its superior blend of base oils plus Royal Purple's proprietary Synerlec additive technology. This unique, synthetic additive technology is proven to make bearings and equipment run smoother, cooler, quieter, longer and more efficiently.

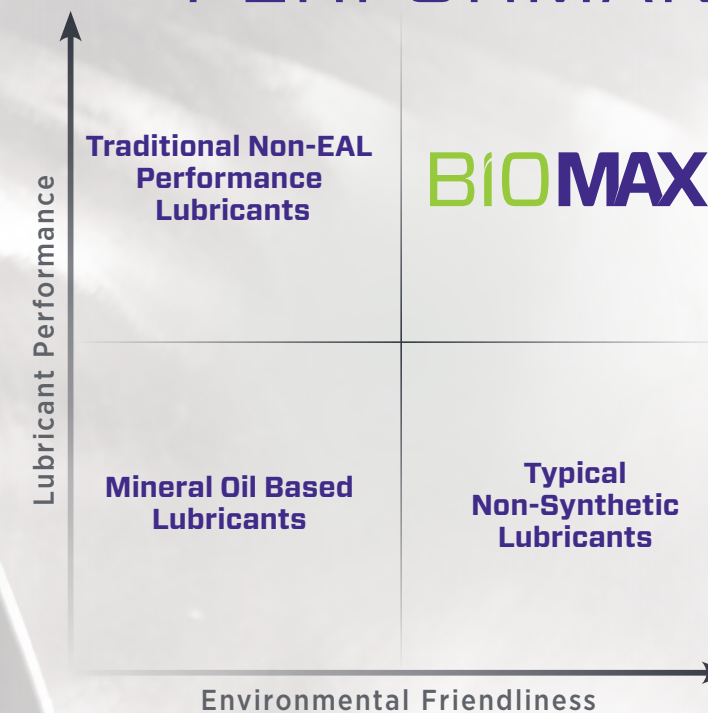
PERFORMANCE & APPLICATIONS

PERFORMANCE ADVANTAGES

- High Film Strength
- Longer Oil Life
- Excellent Corrosion Protection
- Rapidly Separates From Water
- Rapidly Biodegradable
- Renewable Components
- Low Toxicity & Bioaccumulation
- EU ECOLABEL (For EAL Gear Oil)

Royal Purple Biomax lubricants meet or exceed all EAL requirements of ready biodegradability, low toxicity / bio-accumulation, and bio-renewability.

UNCOMPROMISED PERFORMANCE



APPLICATIONS

BIOMAX EAL GEAR OIL

- Bow, Azimuth & Stern Thrusters
- Enclosed Gear Drives
- Mining
- Off Shore Oilfield Drilling
- Wind Gears

For all applications in environmentally sensitive areas.

BIOMAX EAL HYDRAULIC OIL

- Bow, Azimuth & Stern Thrusters
- Capstan Hydraulic Pumps / Winches
- Controllable Pitch Propellers
- Deck Cranes
- Forestry Equipment
- Mobile Equipment (ROVs)
- Offshore Marine Vessels, Work Boats
- Stern Tubes
- Water parks

BIOMAX™
High Performance EAL Gear & Hydraulic Oils

