



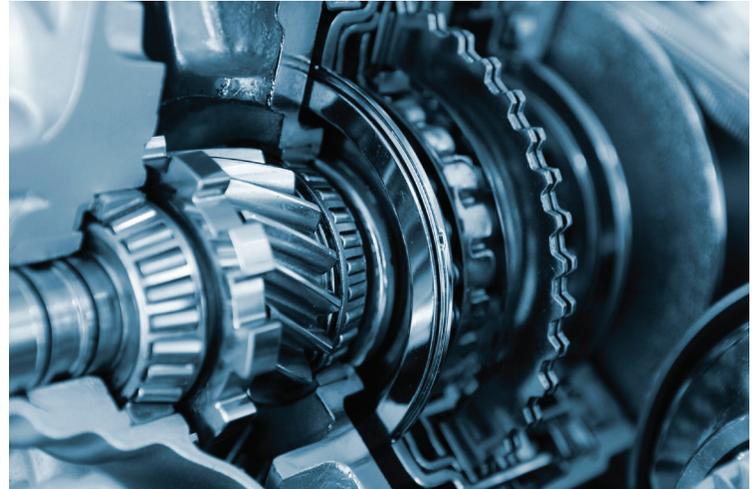
# BIOMAX™ GEAR EAL

ENVIRONMENTALLY ACCEPTABLE SYNTHETIC GEAR 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™ Gear EAL is formulated for enclosed gear systems operating under severe conditions, including elevated temperatures, heavy loads, sliding contact, and frequent start-stop shock loading. Unlike conventional mineral and synthetic gear oils, BioMax Gear EAL combines premium synthetic base oils with our proprietary Synerlec® additive technology to deliver exceptional performance. In demanding applications, this advanced formulation helps gearboxes operate more efficiently and reliably, supporting longer service life and reduced maintenance requirements.

BioMax Gear EAL is EU Ecolabel certified, demonstrating compliance with strict environmental and technical performance criteria. It is recommended for enclosed gear sets where an environmentally acceptable lubricant (EAL) is required or preferred.



BE/027/007



## 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** – Dramatically reduces metal-to-metal contact, friction and wear.

**OUTSTANDING EP PROTECTION** – Provides protection against damage due to severe operation and shock loads.

**EXCEPTIONAL CORROSION & RUST PROTECTION** – Prevents internal damage to equipment from chemical attack.

**SUPERIOR THERMAL STABILITY** – Very high operating temperature range (-25°C to 125°C).

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

**OUTSTANDING SYSTEM PERFORMANCE** – Lowers operating temperatures and improves efficiency.

**SMALLER CARBON FOOTPRINT** – Minimizes waste generation, energy consumption, and CO<sub>2</sub> output by extending oil change intervals.



# BIOMAX™ GEAR OIL

ENVIRONMENTALLY ACCEPTABLE SYNTHETIC GEAR LUBRICANT WITH SYNERLEC®

## TYPICAL APPLICATIONS & INDUSTRIES

- Inland waterway and offshore equipment including vessel thruster, controllable pitch propellers (CPP) and deck machinery
- Mobile and stationary equipment
- Wind turbines
- Construction
- Forestry
- Marine
- Mining
- Power generation
- Waterparks and water treatment facilities

## CERTIFICATIONS

- Ecolabel License No. BE/027/007
- US EPA VGP (2103) and VIDA

## PERFORMANCE REQUIREMENTS MET OR EXCEEDED

- AAA Propulsion (BioMax Gear 100)
- AGMA 9005-F16
- David Brown S1.53.101
- DIN 51517 Part 1, 2 & 3
- GM LS2 EP Gear Oils
- ISO 12925-1
- U.S. Steel 22

## TECHNICAL DATA

| ISO Grade   | 100                 | 150                 | 220                 | 320                 | 460                 | 680                 |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Color</b>  | Amber               | Amber               | Amber               | Amber               | Amber               | Amber               |
| <b>Relative Density @ 60°F/60°F, ASTM D1298</b>   | 0.876               | 0.892               | 0.905               | 0.918               | 0.931               | 0.944               |
| <b>Viscosity @ 100°C cSt, ASTM D445</b>   | 15                  | 21.5                | 27.5                | 36                  | 47                  | 64                  |
| <b>Viscosity @ 40°C cSt, ASTM D445</b>  | 100                 | 150                 | 220                 | 320                 | 460                 | 680                 |
| <b>Viscosity Index ASTM D2270</b>   | 157                 | 160                 | 160                 | 160                 | 160                 | 165                 |
| <b>Flash Point °C (°F), (COC), ASTM D92</b>   | 224 (435)           | 242 (468)           | 243 (469)           | 254 (489)           | 260 (500)           | 267 (513)           |
| <b>Pour Point °C (°F), ASTM D97</b>   | -39 (-38)           | -39 (-38)           | -36 (-33)           | -36 (-33)           | -36 (-33)           | -30 (-22)           |
| <b>Rust Test 4 hrs @ 60°C, DI H<sub>2</sub>O, ASTM D665A</b>  | PASS                | PASS                | PASS                | PASS                | PASS                | PASS                |
| <b>Rust Test 4 hrs @ 60°C, Sea H<sub>2</sub>O, ASTM D665B</b>   | PASS                | PASS                | PASS                | PASS                | PASS                | PASS                |
| <b>Copper Corrosion 3 hrs @ 100°C, ASTM D130</b>  | 1a                  | 1a                  | 1a                  | 1a                  | 1a                  | 1a                  |
| <b>Elastomer Compatibility ISO 6072</b>   | PASS                | PASS                | PASS                | PASS                | PASS                | PASS                |
| <b>Emulsion Characteristics @ 82°C, oil/water/emulsion-minutes, ASTM D1401</b>  | 39/40/1-15          | 40/39/1-20          | 41/37/2-30          | 43/37/0-30          | 42/38/0-35          | 42/37/0-55          |
| <b>Foaming Characteristics 3 sequences @ 24°C, 93.5°C, 24°C: tendency/stability (ml)-time to break (sec), ASTM D892</b> | 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 | 0/0-0, 0/0-0, 0/0-0 | 0/0-0, 0/0-0, 0/0-0 |
| <b>FE8 Bearing Wear D-7.5/80-80, DIN 51819-3</b>  | <1                  | <1                  | <1                  | <1                  | <1                  | <1                  |
| <b>FZG Scuffing A/8.3/90, Fail Stage, ISO 14635-1</b>   | >14                 | >14                 | >14                 | >14                 | >14                 | >14                 |
| <b>Timken OK Load lbs, ASTM D2782</b>   | 100                 | 100                 | 100                 | 100                 | 100                 | 100                 |
| <b>Four-Ball EP Weld Point kgf, ASTM D2783</b>  | 315                 | 315                 | 315                 | 315                 | 315                 | 315                 |
| <b>Four-Ball EP Load Wear Index kgf, ASTM D2783</b>   | 60.3                | 60.1                | 68.8                | 86.8                | 85.6                | 86.4                |
| <b>Four-Ball Wear @ 54°C, 1800 rpm, 20 kgf, 60 minutes, mm wear, ASTM D4172</b>   | 0.28                | 0.28                | 0.28                | 0.28                | 0.28                | 0.28                |
| <b>Four-Ball Wear @ 75°C, 1200 rpm, 40 kgf, 60 minutes, mm wear, ASTM D4172</b>   | 0.49                | 0.48                | 0.50                | 0.46                | 0.45                | 0.45                |
| <b>Biodegradability % (28 days), ASTM D7373</b>   | >60                 | >60                 | >60                 | >60                 | >60                 | >60                 |
| <b>Toxicity (Algae) mg/L, OECD 201</b>  | >1000               | >1000               | >1000               | >1000               | >1000               | >1000               |
| <b>Toxicity (Daphnia) mg/L, OECD 202</b>  | >1000               | >1000               | >1000               | >1000               | >1000               | >1000               |
| <b>Toxicity (Fish) mg/L, OECD 203</b>   | >1000               | >1000               | >1000               | >1000               | >1000               | >1000               |
| <b>Bioaccumulation log POW, OECD 107</b>  | <3                  | <3                  | <3                  | <3                  | <3                  | <3                  |

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