

JAX BIO-GUARD™ GEAR OILS

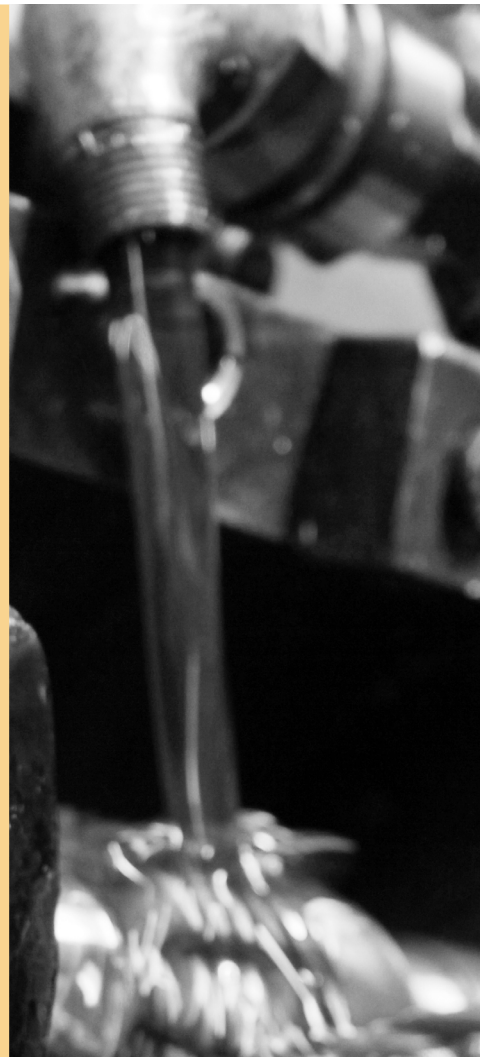
EAL High Performance Gear Oils

PRODUCT DESCRIPTION

JAX Bio-Guard Gear Oils are EAL biodegradable lubricants made from high viscosity index, saturated, synthetic ester base oils fortified with additives that deliver high industrial gear oil performance. These oils are designed to reduce maintenance costs by extending drain intervals and protecting against wear, pitting and rust.

PRODUCT BENEFITS

- **Conforms to Environmental Standards** - Meets EAL standards such as European Eco-label and satisfies US EPA requirements for EAL lubricants which meet Vessel Incidental Discharge Act (VIDA). These standards ensure compliance in terms of biodegradability, toxicity and bio accumulation potential.
- **Wide Temperature Range** - Very high viscosity indices, low pour points and wax-free synthetic formulations make these lubricants ideal for use in wide operating temperature ranges.
- **Water Tolerant** - JAX Bio-Guard Gear Oils are hydrolytically stable and readily separate from water. This prevents unwanted oil/water emulsions that have poor lubricating properties and eases water removal from the sump.
- **Superior Extreme Pressure and Anti-wear Additive Performance** - These oils are fully formulated with proprietary, environmentally safe extreme pressure additives, antioxidants, rust inhibitors and anti-foam agents. They will provide protection against rust from water or process contaminants and prevent foaming, ensuring proper lubrication.
- **Meets AGMA Ratings for Extreme Pressure Gear Oils**



APPLICATIONS

- Gearbox applications on seaborne transit vessels and mobil dredging equipment where there is preferred or mandated use of EAL classified lubricants
- Marine applications operating under heavy loads and shock conditions and specifying an extreme pressure lubricant
- Enclosed industrial spur, bevel, herringbone, helical and worm gears where ground or water contamination is a concern
- Chain drive sprockets and most metal-on-metal systems where ground or water contamination is a concern



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| TYPICAL PROPERTIES | ISO 100 | ISO 150 | ISO 220 | ISO 320 | ISO 460 | METHOD |
|-----------------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Viscosity @ 40°C, cSt | 94.06 | 161.42 | 235.46 | 341.82 | 472.22 | ASTM D 445 |
| Viscosity @ 100°C, cSt | 12.90 | 20.08 | 27.89 | 36.87 | 53.67 | ASTM D 445 |
| Viscosity Index | 134 | 144 | 154 | 155 | 179 | ASTM D 2270 |
| ISO Viscosity Grade | 100 | 150 | 220 | 320 | 460 | ASTM D 2422 |
| SAE Viscosity Grade | 85 | 90 | 90 | 140 | 140 | SAE J300 |
| Pounds per Gallon | 7.651 | 7.701 | 7.783 | 7.856 | 7.903 | ASTM D 1298 |
| Specific Gravity | 0.9988 | 0.9248 | 0.9346 | 0.9433 | 0.9490 | ASTM D 1298 |
| Pour Point °F (°C) | -36 (-38) | -35 (-37) | -29 (-34) | -29 (-34) | -24 (-31) | ASTM D 97 |
| Flash Point °F (°C) | 491 (255) | 509 (265) | 518 (270) | 518(270) | 525 (274) | ASTM D 92 |
| Fire Point °F (°C) | 637 (336) | 635 (335) | 626 (330) | 622 (328) | 651 (344) | ASTM D 92 |
| Color | Straw | Straw | Straw | Straw | Straw | |
| Water Separability | 41-39-0 (10) | 42-38-0 (15) | 43-37-0 (20) | 43-37-0 (25) | 43-37-0 (60) | ASTM D 1401 |
| Rust Test | | | | | | ASTM D 665 |
| Method A - Distilled Water | Pass | Pass | Pass | Pass | Pass | |
| Method B - Synthetic Sea Water | Pass | Pass | Pass | Pass | Pass | |
| FZG | 12 | >12 | >12 | >12 | >12 | ASTM D 5182 |
| Copper Strip Corrosion | 12+ | 12+ | 12+ | 12+ | 12+ | |
| Four-Ball Wear, mm | 0.33 | 0.30 | 0.30 | 0.31 | 0.32 | ASTM D 4172 |
| Falex EP test, lbf | 3000 | 2750 | 2000 | 2000 | 2750 | ASTM D 3233 |
| Four Ball Weld | | | | | | ASTM D 2783 |
| Weld Load, kgf | 200 | 200 | 220 | 220 | 200 | |
| Load Wear Index | 43 | 41 | 45 | 47 | 37 | |
| Falex Wear Test, # Teeth Used | 0 | 0 | 0 | 0 | 0 | ASTM D 2670 |
| Falex Wear Test, % Journal Wear | 0.095 | 0.068 | 0.094 | 0.027 | 0.095 | ASTM D 2670 |
| Falex Wear Test, %Vee-Block Wear | 0 | 0 | 0 | 0 | 0 | ASTM D 2670 |
| Oxidation, Minutes to 25 psi loss | >750 | >750 | >750 | >750 | >750 | ASTM D2272 |

JAX products undergo continual improvement in formulation and manufacture. The values indicated in this PDS are typical production values at the time of this writing. JAX reserves the right to alter and update product data and typical values at any time without notice. It is the responsibility of the installer and/or purchaser to determine if these specifications are adequate and proper for the intended application. MSDS information may be found at jax.com or by contacting JAX INC.

COMPATIBILITY

JAX Bio-Guard Gear Oils exhibit excellent compatibility with most EAL and industrial gear oils. Some base oil chemistries can be incompatible at different levels. Consult JAX for the compatibility rating with gear oils encountered during changeover. JAX Bio-Guard Gear Oils are compatible with mineral gear oils, most synthetic gear oils, and seals.

PACKAGING

| CONTAINER SIZE | ISO 100 | ISO 150 | ISO 220 | ISO 320 | ISO 460 |
|----------------------|------------|------------|------------|------------|------------|
| 2000 Pound Soft Tote | BGGOL-276 | BGGOM-276 | BGGON-276 | BGGOP-276 | BGGOQ-276 |
| 2000 Pound Cage Tote | BGGOL-276H | BGGOM-276H | BGGON-276H | BGGOP-276H | BGGOQ-276H |
| 400 Pound Drum | BGGOL-400 | BGGOM-400 | BGGON-400 | BGGOP-400 | BGGOQ-400 |
| 120 Pound Keg | BGGOL-120 | BGGOM-120 | BGGON-120 | BGGOP-120 | BGGOQ-120 |
| 35 Pound Pail | BGGOL-035 | BGGOM-035 | BGGON-035 | BGGOP-035 | BGGOQ-035 |
| Gallon (4/cs) | BGGOL-004 | BGGOM-004 | BGGON-004 | BGGOP-004 | BGGOQ-004 |