



EnBio MP32

Your responsible choice for a sustainable environment

Product Description

EnBio MP32 is a patented high performance, cost effective, energy saving environmentally safe, biodegradable, synthetic hydraulic fluid designed specifically for use in hydraulic systems in equipment used in environmentally sensitive areas, such as marine, dockside, forestry, elevators and mobile equipment. EnBio MP32 hydraulic fluid meets or exceeds Bosch-Rexroth, Danfoss, Eaton, and Parker's specifications.

Product Features & Benefits

- High viscosity index, which means EnBio MP32, can be used over a wide temperature range having only a minimal impact on the bulk fluid viscosity. No need to use two different grades of hydraulic oil for summer and winter, where one gets high temperature differences, for example New York.
- Outstanding anti-wear performance has been demonstrated which means a longer, more reliable service life, which in turn means lower maintenance costs and less down time.
- A unique additive package provides unsurpassed thermal and oxidative stability, which means that EnBio MP32 remains clean, will **not sludge or varnish** and lasts 3-4 times longer than vegetable hydraulic oils.
- EnBio MP32 is classified as readily biodegradable (by OECD 301B / 301F test method) and is dyed blue for ease of detection when a spill occurs.
- Classified Ecologically harmless, as it has no significant hazard to small mammals, plant life or aquatic life. Under OECD guideline 420 for acute oral toxicity testing, EnBio MP32 is classified as a "compound, which does not present a significant acute toxic risk if swallow
- Should EnBio MP32 accidentally spill into waterways it will NOT form a streak on water (sheen) nor will it form an emulsion or sludge thereby preventing the destruction of future and existing food supplies, breeding animals and habitats which exist on the surface or in contact with water.
- It has been shown through numerous tests, that EnBio MP32's low toxicity, readily biodegradability and **NO** sheen make it ideally suited for the environmentally sensitive applications in or around water.
- Lower friction losses and higher gear efficiencies, leads to reduced sump temperatures, which in turn means better performance and lower maintenance costs.
- A High VI and low coefficient of friction leads to lower Energy consumption (Fuel savings) by increasing pump efficiency due to optimized viscosities at start up , normal operation and peak load conditions.



Typical Physical & Chemical Properties

| Test | Method | Typical Results |
|--|-------------------|-----------------------|
| Appearance | | Blue fluid |
| ISO Viscosity Grade | | 32 |
| Viscosity @ 40°C (Cst) | ASTM D445 | 29.9 |
| Viscosity @ 100°C (Cst) | ASTM D445 | 6.56 |
| Viscosity @ 0 °C (Cst) | ASTM D445 | 164.9 |
| Specific Gravity @ 20°C | ASTM D1298 | 1.02 |
| Viscosity Index | ASTM D2270 | 186 |
| Flash Point (open cup) (°F) | ASTM D92 | 518 |
| Flash Point (Closed cup) (°F) | ASTM D93 | 424 |
| Fire Point (°F) | ASTM D92 | 608 |
| Pour Point (°F) | ASTM D97 | -63 |
| Foam Test — seq.1,11,111 | ASTM D892 | 0/0:20/0:0/0 |
| Corrosion Protection | ASTM D665 (A & B) | Pass |
| Copper Strip Corrosion | ASTM D130 | 1B |
| Turbine Oxidation | ASTM D934 | >5000 Hours |
| Fourball Anti-Wear (mm wear scar) | ASTM D4172 | 0.38 |
| Fourball EP (mm wear scar) | ASTM D2783 | 0.32 |
| Sonic Shear Stability | | |
| - initial viscosity @ 40°C (Cst) | ASTM D5621 | 29.88 |
| - irradiated viscosity @ 40°C (Cst) | | 29.92 |
| - initial viscosity @ 100°C (Cst) | ASTM D5621 | 6.63 |
| - irradiated viscosity @ 100°C (Cst) | | 6.61 |
| Fuel Injection Shear Stability Test | ASTM D 3945 | NO Viscosity Loss |
| V104 Vane Pump Test (mg/hr) | DIN 51,389 M- | 0.016 |
| 35 VQ Vickers Vane Pump Test | 2950-S | Pass |
| FZG Visual Gear Test | ASTM D5182 | Passes 12 stages |
| Modified Sturm Biodegradability Test (28 days) | OECD 301B/301F | Readily Biodegradable |
| Sea Water | | |
| 96 hour Sheephead Minnow LC50 (mg/l) | | > 1000 |
| 96 hour Mysid Shrimp LC50(mg/l) | | > 1000 |
| Fresh Water | | |
| 96 hour Fathead Minnow LC50 (mg/l) | OECD 203 | >28 000 |
| 16 hour Bacterial Inhibition IC50 (mg/l) | | 16 000 |
| 48 Hour Daphina Magna EC (mg/l) | OECD 202 | >29 000 |