

BIOGEAR XP RANGE



DESCRIPTION

BIOGEAR XP is a range of environmentally acceptable, high performance, extreme pressure (EP) gear oils based on fully saturated esters with a high degree of renewability. BIOGEAR XP achieves a biodegradability of > 60% in the 28-day OECD 301B test.

APPLICATIONS

The BIOGEAR XP range is designed for use in sensitive marine environments, where there is potential for fluid loss to occur and has a high degree of renewability. Typical applications include thrusters, some CPP designs and deck equipment.

VGP

BIOGEAR XP and its components have been evaluated by independent laboratories. Using these test results, Vickers Oils has determined that it meets the VGP definition of an Environmentally Acceptable Lubricant.

COMPATIBILITY

BIOGEAR XP has good compatibility with common sealing materials including Nitrile and Viton®. Miscible with common mineral based gear oils, but old oils should be drained completely to avoid any risk of additive incompatibility.

FEATURES AND BENEFITS

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|------------------------------------|---|
| • Biodegradable | Reduced environmental impact in the event of spillage |
| • Outstanding oxidation stability | Less sludge and longer fluid life |
| • Wide operating temperature range | Extends life at temperature extremes |
| • Excellent thermal stability | Less fluid thickening and system failures |
| • Excellent demulsification | Readily separates from water |
| • Good shear stability | Less viscosity loss and fewer fluid changes |
| • High micropitting resistance | Protects gears, even when subject to high loads |

PERFORMANCE DATA

Gear & Bearing Performance

Very good anti-wear performance in four ball wear and EP load / weld tests. Very good performance in the FZG Scuffing test (FLS14), FZG FVA 54 micropitting (LS=10, GFT high) and FE8 Bearing test.

Industrial Gear Standards

BIOGEAR XP meets all requirements of DIN 51517:3 (2018) type CLP lubricating oils and ANSI / AGMA 9005-F16.

BENJN R. VICKERS & SONS LTD.

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Management Standard



FM 01851 EMS 40717

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Hydrolytic Stability

BIOGEAR XP grades show very good hydrolytic stability when compared to competing EALs. However, when used for prolonged periods in the presence of water, at medium to high temperatures, hydrolysis may occur. Therefore the use of a water separator is highly recommended when water is present.

Demulse / Water Separation

Very good water demulsification properties, ensuring easy water separation, if contaminated

Corrosion Protection

Shows good corrosion resistance to steel with salt and fresh water. Also, good corrosion resistance to Copper and Zinc, the common elements in yellow metal.

Foaming

Passes the foam test according to ASTM D892 and shows minimal foaming tendency in Flender foam test.

Oil Compatibility

Miscible with mineral oil and synthetic esters but, in accordance with best practice, it is recommended that the previous oil be fully drained and the system ideally flushed. Vickers do not recommend the mixing of oils.

Elastomer Compatibility

Compatible with standard NBR, HNBR and FKM seal elastomers. Compatible with PTFE and PU80 / PU90 polyurethane samples as tested, but testing of specific grades of polyurethane is advised.

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TYPICAL CHARACTERISTICS AND PROPERTIES

BIOGEAR XP RANGE	TEST METHOD	XP 68	XP 100	XP 150
Appearance	Visual	Clear yellow	Clear yellow	Clear yellow
Viscosity @ 40°C (cSt)	ASTM D7042	68	100	150
Viscosity Index	ASTM D2270	143	139	138
Density @ 15°C (kg/l)	ASTM D4052	0.914	0.921	0.928
Pour Point (°C)	ASTM D7346	≤-27 °C	≤-27 °C	≤-27 °C
Flash Point (COC) (°C)	ASTM D92	> 200	> 200	> 200
Shelf Life	5 years in original sealed containers whilst stored out of direct sunlight			

BIOGEAR XP RANGE	TEST METHOD	XP 220	XP 320	XP 460
Appearance	Visual	Clear yellow	Clear yellow	Clear yellow
Viscosity @ 40°C (cSt)	ASTM D7042	220	320	460
Viscosity Index	ASTM D2270	155	160	165
Density @ 15°C (kg/l)	ASTM D4052	0.938	0.954	0.960
Pour Point (°C)	ASTM D7346	- 36	- 42	- 36
Flash Point (COC) (°C)	ASTM D92	> 200	> 200	> 200
Shelf Life	5 years in original sealed containers whilst stored out of direct sunlight			

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