



Trusted for Generations



BIOGEAR XP: REAL Protection

The Environmentally Acceptable Thruster Lubricant delivering superior anti-wear, EP and oxidation protection even under severe conditions

- Exceeds the requirement of DIN 51517 part 3
- Excellent equipment protection
- Superior thermal stability
- ISO 68, 100 & 150 available

For thrusters



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Accredited to the ISO 9001
Quality Standard and the
ISO 14001 Environmental
Management Standard



FM 1851



EMS 40717

Attribute	Benefit
Extended fluid life	Fewer fluid changes, less equipment downtime and lower overall cost of ownership
Excellent resistance to micropitting	Protects the gear teeth against fatigue wear resulting in less down time
High EP protection	Ability to withstand shock and high loads
Excellent water separation	Enables easy removal of free water
Good hydrolytic stability	Resists breakdown of the lubricant by water in high temperature situations
Wider operating temperatures	Protects equipment from -25°C to over +100°C
Superior oxidative stability	Less sludge and system failures, longer fluid life and less fluid thickening
Good elastomer compatibility	Compatible with most sealing materials including Nitrile and Viton
Biodegradable and non-toxic	Lower environmental risk



Photographs supplied courtesy of Veth Propulsion

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BIOGEAR XP is a range of biodegradable, high performance, extreme pressure (EP) gear lubricants with excellent anti-wear and micropitting performance, available in ISO 68, 100 and 150 viscosities. These lubricants are based on fully saturated synthetic esters with a high degree of renewability and use state-of-the art technology.

BIOGEAR XP is designed for use in sensitive environments where there is a potential for fluid loss to occur, for example from thrusters and some CPP designs.

BIOGEAR XP is miscible with common mineral based gear oils, but in line with good practice, old lubricants should be drained completely to avoid any risk of additive incompatibility and ensure that the full benefits and performance

are achieved. Water content should not exceed 0.1% and any free water must be separated off on a regular basis. Unlike the HYDROX range, these lubricants do not emulsify in water.

BIOGEAR XP achieves a biodegradability of greater than 60% in the 28 day OECD 301B test. These products are considered non-toxic in the marine environment based on the following results:

Fish LC50 exceeds 1000mg/l;
Daphnia EC50 exceeds 1000mg/l;
Algae EC50 exceeds 1000mg/l.

BIOGEAR XP meets the detailed ecological definitions and requirements laid down in the 2013 Vessel General Permit (VGP) published by the US EPA in March 2013.

At a glance

Product	VGP Compliant	Attribute	Test	Result
BIOGEAR XP 68 BIOGEAR XP 100 BIOGEAR XP 150	✓	Wear Protection	FZG	> Load stage 14
			Micropitting	Passes all 5 endurance stages
			FE8	Pass - almost no roller bearing wear
		Corrosion Protection	ASTM D130 Copper Corrosion	Pass
			ASTM D665 Rust (Fresh and Sea Water)	Pass
		Elastomer Compatibility	NBR, HNBR, FKM, PTFE, PU80, PU90	Pass
		Gear Standards	DIN 51517 part 3	Pass
			ISO 12925-1 CKD	Pass
			ANSI/AGMA 9005-E02	Pass

to find out more visit:
www.vickers-oil.com

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