

Priolube™ 6050

Synthetic ester co-base oil for high-performance EAL hydraulic fluids and stern tube oils

Lubricant formulators often face a difficult balance: achieving strong oxidative and hydrolytic stability in water-rich environments while also meeting biodegradability and bio-based content goals. Conventional esters, mineral oils and PAO-based fluids can each leave critical performance gaps depending on the application.

Cargill Priolube™ 6050 is a next-generation synthetic ester co-base fluid engineered to help formulators improve fluid durability, efficiency and environmental profile in hydraulic fluids and stern tube oils. With strong oxidative stability, exceptional hydrolytic stability, ready biodegradability* and 86% bio-based content**, Priolube™ 6050 helps create high-performance Environmentally Acceptable Lubricants (EAL) formulations built for real-world operating conditions.



Key benefits of Priolube™ 6050



Readily biodegradable*



86% bio-based content**



Strong oxidative and hydrolytic stability



Good wear protection and low traction

Product	Kinematic viscosity at 40°C (cSt)	Kinematic viscosity at 100°C (cSt)	Viscosity index	Biobased carbon content (%) [ASTM D6866]	Readily biodegradable [OECD 301B]	LuSC list (EU Ecolabel)
Priolube™ 6050	130	17.5	155	86	✓	✓

What challenges does Priolube™ 6050 solve in hydraulic fluids?

Priolube™ 6050 improves hydraulic fluid performance by increasing resistance to hydrolysis, reducing acid formation and extending fluid life in water-rich systems. Its high oxidative stability enhances durability at elevated temperatures, while delivering 86% bio-based content and ready biodegradability to support EAL requirements. With lower traction, it reduces frictional losses and improves energy efficiency across operating conditions.

Proven performance

Superior oxidative stability

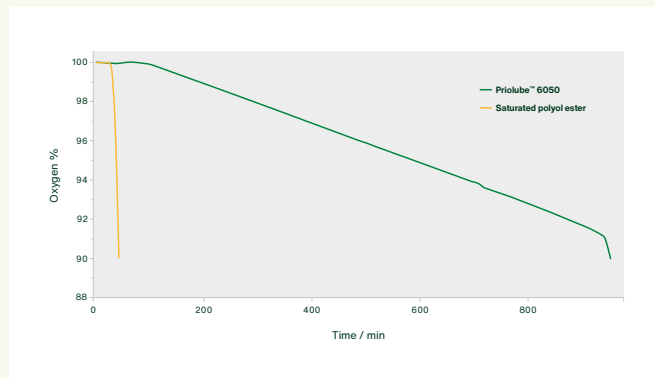


Figure 1: Oxidative stability measured by RapidOxy™*** tester (ASTM D7545). Sample pressurized to 700 kPa O₂ and held at 160 °C; oxidation is tracked as a pressure drop. The time to reach a 10% pressure decrease reflects the sample's oxidation induction time.

***RapidOxy is a trademark of Anton Paar GmbH

Exceptional hydrolytic stability

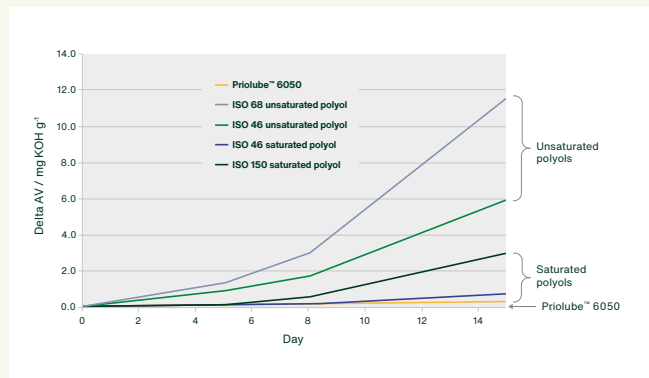


Figure 2: Hydrolytic stability of ester base oils evaluated using Swedish standard SS155181. Samples containing 10% water were held at 90 °C in a sealed conical-flask, and ΔAcid Value was measured at 5, 8 and 15 days.

Efficiency gains at 40°C

Priolube™ 6050 maintains lower traction across operating and high temperature conditions, supporting improved efficiency and reduced wear.

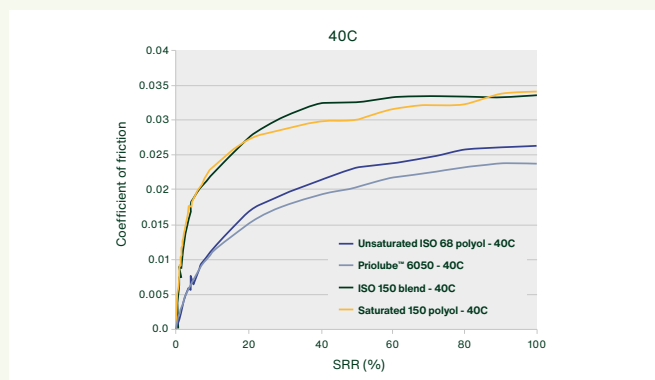


Figure 3: MTM traction curves at 40 °C under 16 N load and 2 ms⁻¹ entrainment speed. Priolube™ 6050 exhibits a lower coefficient of friction across 0-100% SRR than unsaturated and saturated polyol esters and ISO 150 PAO blends, indicating reduced traction and improved efficiency at moderate operating temperatures.

Efficiency gains at 100°C

Priolube™ 6050 maintains lower traction across operating and high temperature conditions, supporting improved efficiency and reduced wear.

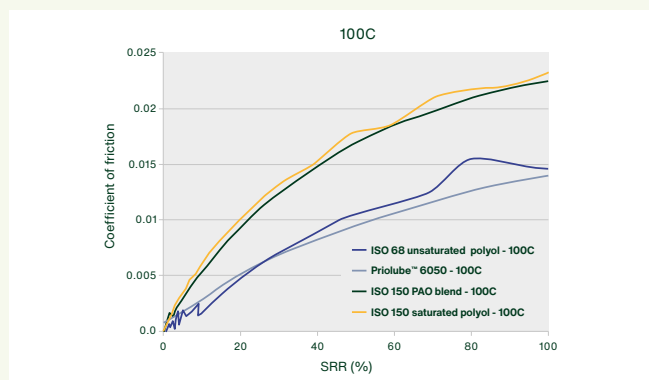


Figure 4: MTM traction curves at 100 °C under 16 N load and 2 m s⁻¹ entrainment speed. Priolube™ 6050 maintains lower traction than comparative ester and PAO systems across the SRR range, demonstrating stable low friction performance and efficiency benefits at elevated temperatures.



Learn more at cargill.com/priolube-6050-ester
or email energy_technologies@cargill.com



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