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Independent Testing Summary: Orion 5000-EL Improves Oil Performance

OKEMOS, Mich. – [Orion Industrial](#) contracted [Petro-Lubricant Testing Laboratories, Inc.](#) to conduct the [ASTM D4172](#) Four Ball test on some common motor oils with and without Orion 5000-EL.

ASTM D4172 Four Ball Test

The four-ball test method determines fluid wear protection. Anti-wear fluids will reduce the amount of metal lost due to friction during metal on metal contact.

Three steel balls are clamped together and covered with the lubricant to be evaluated. A fourth steel ball is pressed with force into the top cavity formed by the three lower balls. Lubricants are compared by the average measure (in mm) of the scar worn into the three lower balls. Lower numbers equate to better lubricant performance.

Motor Oils Were Tested With and Without Orion 5000-EL

Three untreated motor oil samples provided the baseline calculation. Both conventional and synthetic motor oils were tested. Those same motor oils were then treated with Orion 5000-EL at the minimum recommended level of one ounce per quart of motor oil. Additional improvements were noted when the same motor oils were treated with up to three ounces per quart of motor oil. The following results were gathered and reported by Petro-Lubricant:

1 oz / Quart Results	Wear Scar Diameter (mm)			Coefficient of Friction		
	Baseline	With Orion	% Change	Baseline	With Orion	% Change
Oil Tested						
Valvoline Premium SAE 30	0.38	0.37	-2.63%	0.086	0.084	-2.33%
Mobil 1 Synthetic	0.43	0.42	-2.33%	0.084	0.075	-10.71%
Shell Rotella T	0.45	0.43	-4.44%	0.114	0.101	-11.40%

Best Results	Wear Scar Diameter (mm)			Coefficient of Friction		
	Baseline	With Orion	% Change	Baseline	With Orion	% Change
Oil Tested						
Valvoline Premium SAE 30	0.38	0.35	-7.89%	0.086	0.071	-17.44%
Mobil 1 Synthetic	0.43	0.38	-11.63%	0.084	0.062	-26.19%
Shell Rotella T	0.45	0.43	-4.44%	0.114	0.099	-13.16%

All three motor oil samples treated with Orion 5000-EL experienced an improvement in the Wear Scar Diameter as well as a reduction in the Coefficient of Friction compared to its baseline reading. Adding Orion 5000-EL to either conventional or synthetic motor oil improves engine wear by reducing scaring and friction levels between metal surfaces.

The ASTM D4172 Four Ball Wear Test and Coefficient of Friction lab results confirm the real world results of Orion customers. [Orion 5000-EL's](#) molecular properties increase lubricity, thereby improving the motor oil's performance.

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About Orion Industrial, LLC

[Orion Industrial](#), LLC is a new North American manufacturer of synthetic lubricants for industrial uses (e.g., gear boxes) and for use in internal combustion engines. Orion 5000-EL is a synthetic fuel and engine lubricant formulated with ASET™ technology for medium and heavy-duty diesel engines. To learn more about Orion Industrial, LLC visit www.orion5000.com or email info@orion5000.com.

About Petro-Lubricant Testing Laboratories, Inc.

[Petro-Lubricant](#) is a member of the ASTM International, the global leader in development and delivery of international testing standards. In addition, Petro-Lubricant is ISO 9001:2000 certified, and is PJLA ISO/IEC 17025 Accredited.

About ASTM International

[ASTM International](#), formerly known as American Society for Testing and Materials, is one of the largest voluntary standards development organizations in the world known for their high technical quality and market relevancy. They are a trusted source for technical standards in materials, products, systems, and services.

About the Environmental Protection Agency

The [Environmental Protection Agency](#) sets rules and regulations to protect human health and the environment.

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