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New Formula, Same Promise: Maximum Engine Life and Performance

We discuss the next-generation Signature Series 100% Synthetic Motor Oil with AMSOIL Chairman & CEO Alan Amatuzio.



by **TERRY JOHNSEN**
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Years of research and experimentation, scores of candidate formulations, endless hours and miles of validation have all culminated in an exciting leap forward in motor-oil performance. We sat down with



said it was the best oil AMSOIL has ever made. Conventional wisdom would say, "don't change the recipe when you're making good biscuits." Why make a change?

Alan Amatuzio: With decades of formulation expertise under our belts and mountains of data at our disposal, we know what to throw out and what to keep. AMSOIL is always moving forward with an eye on the horizon for what's next. Meanwhile, gasoline particulate filters are being introduced for automotive applications and that is driving the introduction of new specifications like ILSAC GF-7 and GF-8. We continually explore different base-oil and additive materials to uncover new versions or combinations of materials that can potentially unlock new levels of performance and protection. We are always seeking to improve. Always. And if we can develop improved technology that delivers stronger benefits for our customers, we do it. That is what we've done with the new Signature Series. The last formulation was the best oil we'd ever made; this one is even better and not just by a little bit.



How the Formula Changed

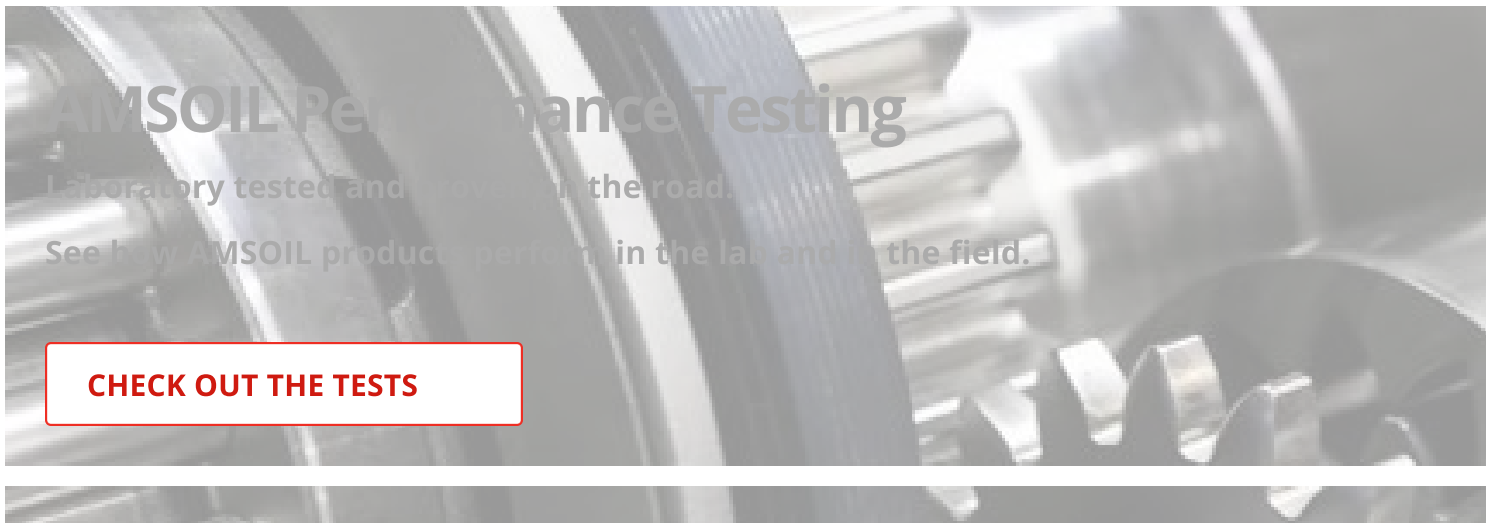
AM: *That is a bold claim. How is the new formulation better?*

AA: It is better in every way. Specifically, next-generation Signature Series provides 12.5% better results in Cold Cranking Simulator testing. In the Thermo-Oxidation Engine Oil Simulation Test, the TEOST, it performed three times better than the old formula. In Sequence IIH, we saw a 16% improvement in weighted piston deposits versus the old formula, and that's a big deal. With the last formulation, we ran a double-length Sequence IIH on the last version of Signature Series and the results were outstanding. Well, we did it again and the results are even better.



On Piston Cleanliness

AA: Absolutely! Signature Series was already in a class of its own. Consider the 16% improvement in piston-cleanliness results in Sequence IIH, for example. With the old formula, pistons from the test were nearly spotless after a normal test cycle. You wouldn't think we could improve on that, but we did. When you can take something that is on the leading edge of what is possible and make measurable improvements that translate into meaningful benefits for customers, it is remarkable.



AM: Tell us more about Sequence IIH.

AA: The Sequence IIH test is an industry-standard test designed to evaluate motor oil in several key performance areas. It's a 90-hour test that essentially simulates driving a fully loaded pickup towing a heavy trailer up a long mountain grade in the desert for 3,000 miles (4,828 km) without a break, and it must be passed to meet API and ILSAC specifications. Results are a good indicator of how well an oil will perform in the real world. It is common for competing oils to barely pass the standard test with minimum passing scores. Signature Series is barely challenged by Sequence IIH. The ability to prevent piston deposits is one of the main areas Sequence IIH measures. After the test, the engine is torn down and the pistons are examined. They receive a score based on weighted piston deposits, and the higher the score, the cleaner the oil kept the pistons. After the standard 90-hour Sequence IIH test, our new Signature Series formulation received the highest rating ever achieved at the lab that performed the test – and that lab tests many different oils. So we doubled the test to 180 hours and Signature Series still easily passed and provided cleaner pistons than required.



The pistons remained exceptionally clean from deposits after the 90-hour Sequence IIH Test.



Even after doubling the Sequence IIH test, Signature Series delivered cleaner pistons than required by the industry standard.

On Deposit Prevention

AM: *So you're saying if you want an oil that keeps pistons clean, Signature Series is the best choice?*

AA: Without question. We saw a substantial improvement in deposit prevention compared to the old formula, excellent viscosity control and zero stuck rings.

AM: *When the last formulation of Signature Series launched, low-speed pre-ignition, or LSPI, was a relatively new phenomenon that was creating challenges for motor-oil formulators. Is LSPI still a concern?*

AA: LSPI is still a concern, but the industry has learned a lot about what causes it and what to consider in regards to oil performance. Particularly, how oil manages LSPI over the course of its useful service life. With the old formulation, we referenced the GM* dexos* LSPI test, which only tested oil when it was new. Now, the industry has settled on the Sequence IX test to evaluate a lubricant's resistance to uncontrolled



to increase the severity and try to challenge Signature Series. All standard test protocols were removed, except we aged the oil for 25,000 miles in a high-output 3.5-liter EcoBoost in a Ford Raptor. Even after 25,000 miles of use, Signature Series far exceeded the minimum requirements for protection against LSPI.



The Testing Behind It

AM: Outstanding. Each iteration of Signature Series is claimed to be better than the last. It looks like you've got plenty of proof to back that up.

AA: We absolutely do, and for the record, AMSOIL never takes a step backward. We push performance forward. It is extremely important to me that we uphold our brand promise. When you buy an AMSOIL product, you will get what you paid for. If we can find a better way to serve customers or make a better product that will provide them with more peace of mind or help them improve the profitability of their business, we will do it. The new Signature Series delivers the best viscosity control, the best deposit prevention, the best engine cleanliness, the best varnish control, the best volatility prevention and the best cold-temperature performance we have ever achieved. It is, again, the best oil we have ever formulated and that is no easy task in today's environment.

AM: Why is it more difficult today?

What Comes Next



relentless testing and the freedom to engineer without compromise.



AMSOIL: Persistence & Innovation
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by **TERRY JOHNSEN**
AMSOIL Communications Director

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What Does Oil Viscosity Mean

Oil viscosity is the measure of its resistance to flow. How quickly or slowly motor oil flows affects how well it protects your engine.

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