Signature Series 100% Synthetic Motor Oil
A New Level of Motor Oil Technology

AMSOIL was founded on innovation, beginning with our introduction of the world’s first API-qualified synthetic motor oil. By ignoring conventionally accepted limitations and refusing to stop short of success, we set a new benchmark for lubricant performance. These same principles guide our product development today, resulting in Signature Series Synthetic Motor Oil. Signature Series is not only the best oil we have ever made, it’s also better than any competitive oil we have tested. Some may claim that Signature Series is over-engineered. Perfect. It is not for everyone. It is for those who want the absolute best engine protection, and it delivers.

Protects Against Engine Wear
AMSOIL Signature Series Synthetic Motor Oil develops a strong fluid film that keeps metal surfaces separated while its robust anti-wear additives further reduce wear in metal-to-metal contact regions for maximum engine life. The Sequence IVA Engine Test, which must be passed to meet the industry-standard API SN PLUS specification, simulates extended periods of stop-and-go driving. For 100 hours, the test engine cycles between 50 minutes of idling and 10 minutes of elevated rpm – conditions that encourage engine wear. The camshaft is then measured for wear in 84 locations and an average score is determined. We used Signature Series 0W-20, the lightest viscosity in the line, to further increase the severity of the test. AMSOIL Signature Series Synthetic Motor Oil provided 75 percent more engine protection against horsepower loss and wear than required by the industry standard, extending the life of vital components like pistons and cams.

SEQUENCE IVA ENGINE TEST
Lower number = less wear

After rigorous third-party testing, the cam lobes show little-to-no wear.

*Based on independent testing of AMSOIL Signature Series 0W-20, in ASTM D6691 as required by the API SN PLUS specification.
Protects Pistons from Low-Speed Pre-Ignition

We armed Signature Series with an advanced detergent system that protects against harmful deposits and low-speed pre-ignition (LSPI). Most new engines feature gasoline direct injection (GDI), often combined with a turbocharger to boost power and improve fuel economy. These new technologies, when combined with a poorly formulated motor oil, promote LSPI and threaten engine operation. LSPI is the spontaneous ignition of the fuel/air mixture prior to spark-triggered ignition. It occurs in today’s advanced engines and is much more destructive than typical pre-ignition. A properly formulated motor oil is critical for protecting your engine.

Original equipment manufacturers (OEMs) like GM* have addressed the issue by designing tests to determine a motor oil’s ability to prevent LSPI. Signature Series Synthetic Motor Oil achieved **100 percent protection against LSPI** in the engine test required by the GM dexos1 Gen 2 specification – zero occurrences were recorded throughout five consecutive tests.

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Protects Turbochargers

Our unique synthetic formulation is inherently stable to resist oxidation and neutralize acids. Signature Series Motor Oil provides outstanding protection against deposits common to high-temperature engine environments. The tremendous heat and stress turbos create can cause some oils to break down and form harmful bearing deposits through a process known as turbo coking. Over time, turbos can suffer reduced performance or fail altogether.

We challenged Signature Series to the GM Turbo Coking Test, which consists of 2000 cycles of extreme heat soaks. An oil must limit the temperature change within the turbocharger to 13 percent or less to pass the test. Signature Series limited the temperature increase to only 3.6 percent, **protecting the turbocharger 72 percent better than required** by the GM dexos1® Gen 2 specification.

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Maximum Cleaning Power to Battle Sludge

AMSOIL Signature Series Synthetic Motor Oil has **50 percent more detergents** to help keep oil passages clean and promote oil circulation. Engine failures due to sludge are often caused by a plugged oil pick-up tube screen – the motor is effectively starved of oil. The Sequence VG Engine Test measures an oil’s ability to prevent sludge. During the test, a Ford 4.6L engine is subjected to sludge-inducing conditions for 216 hours. The industry standard allows for 10 percent blockage before the motor oil fails the test. Signature Series produced a screen virtually free from sludge (see image). Its detergent and dispersant additives are so effective, Signature Series provides **90 percent better protection against sludge.**

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Trusted by Professional Engine Builders

Dedicated engine builders and mechanics put in long hours honing their craft. These architects of powerful, high-performance engines turn to Signature Series to protect their passion.

“When we use AMSOIL, I don’t worry about a film breakdown or an oil breakdown – and the oil pressure is always consistent. We’ve tested oils back-to-back on the dyno in our shop and we’re always able to make more power with AMSOIL.”

Brett Bowers, Engine Masters Competitor and Professional Engine Builder

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Extends Drains: Protection Guaranteed

AMSOIL Signature Series Synthetic Motor Oil provides reserve protection, allowing you to go longer between oil changes if you choose – up to 25,000 miles, 700 hours of operation or one year, whichever comes first*. Our unique synthetic formulation and long-drain additive system are inherently stable to resist oxidation and neutralize acids over longer periods. Signature Series is designed to deliver outstanding engine protection, cleanliness and performance over extended drain intervals – guaranteed. It provides peace of mind so you can fit oil changes into your schedule.

* Based on independent testing of AMSOIL Signature Series 5w-30 motor oil, in the LSPI engine test as required for the GM dexos1® Gen 2 specification.

* Based on independent testing of AMSOIL Signature Series 5W-30 in the GM turbo coking test vs. AMSOIL OE Motor Oil.

* Based on independent testing of AMSOIL Signature Series 5W-30 in the ASTM D6593 engine test for oil screen plugging as required by the APA SN PLUS specification.

* All trademarked names and images are the property of their respective owners and may be registered marks in some countries. No affiliation or endorsement claim, express or implied, is made by their use. All products advertised here are developed by AMSOIL for use in the applications shown.

* refer to back page for details.
**Limits Oil Consumption**

Signature Series has a uniform molecular structure that limits evaporation and keeps it where it’s needed most—protecting your engine. Volatility (burn-off) occurs when oil gets hot, causing lighter molecules to burn off or evaporate. This leads to oil thickening, additive imbalance, higher emissions and oil consumption. The NOACK Volatility test is the industry standard for evaluating motor oil high-temperature evaporation. It measures the percentage of burn-off after a motor oil is placed under constant airflow at 462°F for 1 hour. A lower number indicates a better resistance to evaporation. Signature Series falls far below the API limit for volatility, reducing the need for frequent oil top-offs and limiting vehicle emissions.

**Preserves Horsepower**

The extreme durability of Signature Series Motor Oil helps your engine run stronger, for longer. We installed Signature Series 5W-30 Synthetic Motor Oil in a Ford F-150 with a new 3.5L Ecoboost* engine to test its ability to protect turbocharged direct-injection (TDGI) engines from torque and horsepower loss during extended drain intervals up to 25,000 miles. Power sweeps were done at the beginning and end of the test to evaluate horsepower and torque retention. As the graph shows, Signature Series helped maintain engine performance throughout the 100,000 mile test.

**Easier Cold Starts**

Signature Series Synthetic Motor Oil does not contain paraffins (wax) and stays fluid in temperatures of -58°F and lower. Extreme cold causes other motor oils to thicken, starving vital moving parts of lubrication, accelerating wear and even preventing vehicles from starting. Signature Series provides 66 percent better cold-temperature performance for easier starting, better fuel economy, improved oil flow (as seen below) and reduced wear.

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TYPICAL TECHNICAL PROPERTIES
AMSOIL Signature Series Synthetic Motor Oil

<table>
<thead>
<tr>
<th>Property</th>
<th>0W-20 (ASM)</th>
<th>5W-20 (ALM)</th>
<th>0W-30 (AZO)</th>
<th>5W-30 (ASL)</th>
<th>10W-30 (ATM)</th>
<th>0W-40 (AZF)</th>
<th>5W-50 (AMR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinematic Viscosity @ 100°C, cSt</td>
<td>8.8</td>
<td>8.8</td>
<td>10.4</td>
<td>10.3</td>
<td>10.0</td>
<td>14.8</td>
<td>19.4</td>
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<tr>
<td>Kinematic Viscosity @ 40°C, cSt</td>
<td>47.1</td>
<td>50.6</td>
<td>57.1</td>
<td>59.7</td>
<td>62.3</td>
<td>84.6</td>
<td>119.5</td>
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<tr>
<td>Viscosity Index (ASTM D2270)</td>
<td>169</td>
<td>153</td>
<td>173</td>
<td>162</td>
<td>147</td>
<td>184</td>
<td>185</td>
</tr>
<tr>
<td>CCS Viscosity, cP @ 45°C (ASTM D5293)</td>
<td>5122 (-35)</td>
<td>4385 (-30)</td>
<td>5372 (-35)</td>
<td>3968 (-30)</td>
<td>4278 (-25)</td>
<td>6062 (-35)</td>
<td>5108 (-30)</td>
</tr>
<tr>
<td>Flash Point °C (ASTM D92)</td>
<td>244 (471)</td>
<td>244 (471)</td>
<td>238 (460)</td>
<td>244 (471)</td>
<td>256 (492)</td>
<td>238 (460)</td>
<td>244 (471)</td>
</tr>
<tr>
<td>Fire Point °C (ASTM D92)</td>
<td>-53 (-63)</td>
<td>-50 (-58)</td>
<td>-50 (-58)</td>
<td>-47 (-52)</td>
<td>-50 (-58)</td>
<td>-48 (-54)</td>
<td></td>
</tr>
<tr>
<td>NOACK Volatility, % weight loss (g/100g) (ASTM D5800)</td>
<td>8.5</td>
<td>5.8</td>
<td>8.8</td>
<td>6.7</td>
<td>4.1</td>
<td>7.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Pour Point °C (ºF) (ASTM D97)</td>
<td>-53 (-63)</td>
<td>-50 (-58)</td>
<td>-50 (-58)</td>
<td>-47 (-52)</td>
<td>-50 (-58)</td>
<td>-48 (-54)</td>
<td></td>
</tr>
<tr>
<td>High-Temperature/High-Shear Viscosity @ 150°C, 1.0 X 10⁶ s⁻¹, cP (ASTM D641)</td>
<td>2.67</td>
<td>2.67</td>
<td>3.07</td>
<td>3.11</td>
<td>3.11</td>
<td>3.76</td>
<td>4.45</td>
</tr>
<tr>
<td>Total Base Number (ASTM D2896)</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
</tr>
</tbody>
</table>

APPLICATIONS
Use AMSOIL Signature Series Synthetic Motor Oil in applications that require any of the following specifications:

0W-20 (ASM): API SN PLUS (Resource Conserving), SM...; GM dexos 1 Gen 2 (supercedes LL-A-025, 6094M, WSS-M2C945-A, ACEA A5/B5, A1/B1; Chrysler MS-6395, ILSAC GF-5; 4... Fortified with detergents that exceed the dexos 1 Gen 2 sulfated ash specification.

5W-20 (ALM): API SN PLUS (Resource Conserving), SM...; GM dexos 1 Gen 2 (supercedes LL-A-025, 6094M, WSS-M2C945-A, ACEA A5/B5, A1/B1; Chrysler MS-6395, ILSAC GF-5; 4... Fortified with detergents that exceed the dexos 1 Gen 2 sulfated ash specification.

0W-30 (AZO): API SN PLUS (Resource Conserving), SM...; GM dexos 1 Gen 2 (supercedes LL-A-025, 6094M, WSS-M2C945-A, ACEA A5/B5, A1/B1; Chrysler MS-6395, ILSAC GF-5, 4... Fortified with detergents that exceed the dexos 1 Gen 2 sulfated ash specification.

5W-30 (ASL): API SN PLUS (Resource Conserving), SM...; GM dexos 1 Gen 2 (supercedes LL-A-025, 6094M, WSS-M2C945-A, ACEA A5/B5, A1/B1; Chrysler MS-6395, ILSAC GF-5, 4... Fortified with detergents that exceed the dexos 1 Gen 2 sulfated ash specification.

10W-30 (ATM): API SN PLUS (Resource Conserving), SM...; GM dexos 1 Gen 2 (supercedes LL-A-025, 6094M, WSS-M2C945-A, ACEA A5/B5, A1/B1; Chrysler MS-6395, ILSAC GF-5, 4... Fortified with detergents that exceed the dexos 1 Gen 2 sulfated ash specification.

0W-40 (AZF): API SN PLUS, SM...; Chrysler MS-12633, MS-10725, MS-10550; Nissan GT-R

5W-50 (AMR): API SN PLUS, SM...; Ford WSS-M2C931-C (Mustang*)

COMPATIBILITY
AMSOIL Signature Series Synthetic Motor Oil is compatible with other conventional and synthetic motor oils. Mixing other oils with AMSOIL motor oils, however, will shorten the oil’s life expectancy and reduce its performance benefits. AMSOIL does not support extended drain intervals where oils have been mixed.

Aftermarket oil additives are not recommended for use with AMSOIL synthetic motor oils.

TECHNICAL SERVICES
For immediate answers to your technical questions call (715) 399-TECH (8324) between 8 a.m. and 5 p.m. Central time or email tech@amsoil.com.

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SERVICE LIFE
Normal Service – Up to 25,000 miles, 700 hours of operation or one year, whichever comes first, in personal vehicles not operating under severe service.

Severe Service – Up to 15,000 miles, 700 hours of operation or one year, whichever comes first. Severe service conditions include commercial or fleet vehicles; excessive idling; or frequent towing, hauling, plowing or driving in dusty conditions.

- Modified engines (non-stock), racing vehicles and vehicles using alternative fuels (E85, CNG, propane, etc.) are excluded from extended drain interval recommendations.
- Change at the vehicle manufacturer’s recommended drain interval or every 12,000 miles or one year with other brand filters unless longer intervals are recommended by the vehicle manufacturer. Always change filter when changing oil.
- Check oil regularly to maintain proper fill levels.

AMSOIL Ea® Full-Flow Oil Filters stop smaller particles, flow more oil and last longer than regular filters. For best performance, use AMSOIL Ea Full-Flow Oil Filters.

AMSOIL PRODUCT WARRANTY
Using AMSOIL synthetic lubricants or practicing extended drain intervals does not void your new vehicle or equipment manufacturer’s warranty. All AMSOIL lubricants and filters are covered by the AMSOIL Limited Warranty. For complete information visit www.amsoil.com/warranty.aspx.

HEALTH & SAFETY
This product is not expected to cause health concerns when used for the intended application and according to the recommendations in the Safety Data Sheet (SDS). An SDS is available at www.amsoil.com or upon request at (715) 392-7101. Keep Out of Reach of Children. Don’t pollute. Return used oil to collection centers.