

Specialty/Synthetic Motor Oils

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Time was when a person could open a can of motor oil, pour it in their vehicle and be done with the process. But, if history has taught us anything it is that American consumers love being able to choose.

As automobiles evolved, motor oil companies formulated motor oil in different grades to work best with particular engines. Later, synthetic motor oils were developed, promising the maximum protection, but coming at a premium price. Now, so-called 'specialty' or 'boutique' motor oils have become all the rage.

Have a vehicle with more than 75,000 miles? There's an oil for that (several, in fact). How about a car with a high horsepower engine? Got that covered, too. You say you need an oil that works well in frigid North Dakota winters? These days, you can find just what you need.

In past years, *National Oil & Lube News* has featured synthetic and synthetic blend motor oils in its pages, but this year we decided to add to that. With more and more specialty motor oils popping up, we decided to take a look at all of them.

According to our most recent Fast Lube Operators Survey, fully 7 percent of fast lube customers purchase synthetic motor oil, a figure that is expected to grow. In fact, several motor oil manufacturers expect that by 2009, synthetic motor oil will account for as much as 10 percent of the product they sell.

While we have no figures for specialty motor oil sales in fast lubes (that data is coming in this year's Operators Survey), estimates of fast lube customer usage of specialty



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Specialty/Synthetic Oils Offered:	Specifications Met:	Grades Available:
XL7500 Motor Oil	API: SL, CF ILSAC: GF-3 (5W-20, 5W-30, 10W-30)	5W-20, 5W-30, 10W-30, 10W-40
Series 2000 Synthetic Motor Oil	API: SL ILSAC: GF-3	0W-30
European Formula Oil	API: SL, CI-4 ILSAC: No	5W-40
100% Synthetic Motor Oil	API: SL, CF ILSAC: GF-3 (5W-30, 10W-30)	5W-30, 10W-30, 20W-30, 10W-40

For more information, call (715) 392-7101.



Specialty/Synthetic Oils Offered:	Specifications Met:	Grades Available:
Castrol Syntec	API: SL, CF ILSAC: GF-3	0W-30, 5W-20, 5W-30, 5W-40, 5W-50, 10W-30, 10W-40, 20W-50
Castrol Syntec Blend	API: SL ILSAC: GF-3 (5W-20, 5W-30, 10W-30, 10W-40, 20W-50)	5W-20, 5W-30, 10W-30, 10W-40, 20W-50
Castrol Syntec Truck Blend	API: SL, CI-4 ILSAC: No	5W-20, 5W-30, 15W-40
Castrol GTX High Mileage	API: SL, SH ILSAC: GF-3	5W-30, 10W-30, 10W-40, 20W-50
Castrol GTX Start Up	API: SL ILSAC: GF-3	5W-30, 10W-30, 10W-40

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motor oil range from 3 to 8 percent. Some motor oil manufacturers estimate that in five years time, specialty motor oils (not including synthetic motor oil) will account for as much as 12 percent of their product sold.

Combined, that means that by the end of this decade, perhaps as much as one-fifth of the motor oil sold in this country may be either synthetic or specialty.

Much has been written about synthetic motor oils in the past, but just in case someone in the back of the class wasn't paying attention, here are the highlights.

"Synthetic lubricants are highly engineered, human-made hydrocarbons tailored to meet predetermined specifications," said Allan Perry, technical coordinator with ConocoPhillips Company. "Synthetics maintain a controlled structure with predictable properties, which, when blended with additives, can fight rust, corrosion, scuffing and wear. Synthetics are designed to address specific performance issues such as high or low temperature use."

Because a vehicle's engine acts as its heart, synthetic motor oil can ensure that vehicles remain in tip-top shape.

"Synthetic lubricants offer better pumpability and easier starting at low temperatures, resulting in less wear and potential fuel savings," Perry said. "They also offer improved resistance to oxidation and thermal breakdown at high temperatures, which results in less oil thickening, fewer engine deposits and longer service life. They have quicker oil flow at low temperatures and thicker lubricating films at high temperatures. And, they have low volatility at elevated temperatures, leading to reduced oil consumption and operating costs."

In discussing specialty oils, we must first define what, exactly, comprises a 'specialty' oil. For our purposes, a specialty oil is any motor oil targeted at a specific vehicle type or motoring need, and one that meets API and/or ILSAC stan-

ChevronTexaco



Chevron

<u>Specialty/Synthetic Oils Offered:</u>	<u>Specifications Met:</u>	<u>Grades Available:</u>
Havoline High Mileage Protection	API: SL ILSAC: No	5W-30, 10W-30, 10W-40
Havoline Synthetic	API: SL ILSAC: GF-3 (5W-30, 10W-30)	5W-30, 10W-30, 5W-40
Havoline Synthetic Blend	API: SL ILSAC: GF-3	5W-30, 10W-30
Supreme High Mileage Motor Oil	API: SL ILSAC: No	5W-30, 10W-30, 10W-40
Supreme Synthetic Motor Oil	API: SL ILSAC: GF-3 (5W-30, 10W-30, 5W-40)	5W-30, 10W-30, 5W-40
Supreme Synthetic Blend Motor Oil	API: SL ILSAC: GF-3	5W-30, 10W-30

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LUBRICANTS

<u>Specialty/Synthetic Oils Offered:</u>	<u>Specifications Met:</u>	<u>Grades Available:</u>
Citgo Supergard Synthetic	API: SL, CF ILSAC: GF-3	5W-30, 10W-30
Citgo Supergard UltraLife	API: SL ILSAC: GF-3 (10W-30)	10W-30, 10W-40

For more information, call (918) 495-4106.

dards for passenger car motor oils. Some, but not all, specialty oils are full synthetic or synthetic blend motor oils. A quick glance at the current specialty products on the market today include European formulas, motor oils made for trucks and sport-utility vehicles (SUVs), the highly popular high mileage motor oils, motor oils designed to help vehicles start in difficult conditions, winter motor oils, racing motor oils, motor oils designed for high horsepower engines, motor oils for new vehicles and motor oils for advanced engines. Admittedly, some of these ‘specialty’ motor oils may be mere exercises in branding, but any tactic that presents consumers with more choices and fast lube operators with more profit opportunities is a good thing.

One of the first companies to move into the specialty motor oil arena was Quaker State.

“We were one of the first to approach motor oils as a niche formulated for what vehicles a person drives,” said Jim Newsom, product manager for Quaker State Passenger Car Motor Oils. “Our 4x4 motor oil was the first motor oil specifically made for a vehicle application. The thinking behind it was that people drive in a variety of different driving cycles, and consumers didn’t understand the type of driving they did. From a brand point of view, there was a need for a product that would outperform regular motor oil.”

Newsom said that designing motor oil for specific vehicle applications, and branding that oil so that consumers know exactly what it’s designed to do, has been a commercial success.

An example of that is motor oil designed for high horsepower engines.

“You would think that people who drive cars with high horsepower engines would see higher transient revs. A Honda S2000 that redlines at 9500 rpm will probably be driven at higher revs than a Ford Taurus that redlines at 6000 rpm,” Newsom said. “People with different cars have different driving

ConocoPhillips



<u>Specialty/Synthetic Oils Offered:</u>	<u>Specifications Met:</u>	<u>Grades Available:</u>
76 High Performance Full Synthetic Motor Oil	API: SL, CF ILSAC: GF-3 (10W-30)	10W-30, 20W-50
76 Pure Synthetic Motor Oil	API: SL, CF ILSAC: No	5W-40
Conoco Syncon HP Synthetic Motor Oil	API: SL, CF ILSAC: GF-3	5W-30, 10W-30
Phillips TropArtic 100% Synthetic Motor Oil	API: SL, CF ILSAC: GF-3 (5W-30)	5W-30, 5W-50
Phillips TropArtic Synthetic Blend Motor Oil	API: SL ILSAC: GF-3	10W-30
Phillips TropArtic Racing Synthetic Blend Motor Oil	API: SL, CF ILSAC: No	15W-40
Kendall GT-1 Full Synthetic Motor Oil	API: SL, CF ILSAC: GF-3 (5W-30, 10W-30)	5W-30, 10W-30, 5W-40
Kendall GT-1 Synthetic Blend Motor Oil	API: SL ILSAC: GF-3 (5W-30, 10W-30)	5W-30, 10W-30, 10W-50
Kendall GT-1 High Mileage Synthetic Blend Motor Oil	API: SL ILSAC: No	5W-30, 10W-30, 10W-40

For more information, call (580) 767-3067.

habits. But engines that run at a high rpm and high loads — like accelerating from zero to 60 miles per hour in a short time — put stress on oil that you don't see in normal operating conditions. We formulated a high horsepower motor oil that passes European tests that use a high horsepower versus displacement engine. Oils that meet these tests require additional additives that help the oil maintain its characteristics and not age quickly despite the additional stress. And drivers of these vehicles don't want their performance robbed."

Newsom added that regardless of a motor oil's formulation, it still needs to be changed at regular intervals.

One of the hottest categories in specialty motor oil is the high mileage formulation, a niche pioneered by Valvoline and its MaxLife motor oil. Like most other oil companies, Quaker State was quick to add its own product to this burgeoning market.

"Virtually all motor oils with the (ILSAC) starburst symbol are designed for newer vehicles," Newsom said. "They're designed to meet fuel economy requirements mandated by CAFE. All these oils are designed for newly manufactured engines. As a result, their design features are really focused on that new engine. There is a huge opportunity and need for motor oil made with a different chemistry that meets the needs of higher mileage engines. Starburst oils tend to be on the thin side because thin oils are better for fuel economy."

Newsom said there is a noteworthy property difference between oils formulated for the starburst and high mileage motor oils.

"Worn engines function better with thicker oils. Cylinder compression is increased, which helps the performance of older engines," he said. "Another thing is that seals inside an engine age. (Most high mileage) engine oils have special,

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Specialty/Synthetic Oils Offered:	Specifications Met:	Grades Available:
Mobil 1	API: SL, CF ILSAC: GF-3 (0W-20, 0W-30, 0W-40, 5W-30, 10W-30)	0W-20, 0W-30, 0W-40, 5W-30, 10W-30, 15W-50
Mobil Drive Clean Plus Newer Vehicle Formula Synthetic Blend	API: SL, CF ILSAC: GF-3	5W-30
Mobil Drive Clean Plus High Mileage Formula Synthetic Blend	API: SL, CF ILSAC: No	5W-30, 10W-30, 10W-40
Mobil 1 Racing	API: No ILSAC: No	0W-20
Mobil 1 Truck & SUV	API: SL, CF ILSAC: No	5W-40

For more information, call (703) 846-3304.

Specialty/Synthetic Oils Offered:	Specifications Met:	Grades Available:
Royal Purple Synthetic Oil	API: SL (5W-20, 5W-30) CI-4 (10W-30, 15W-40) CF, CF-2, SJ (10W-40, 20W-50) ILSAC: No	5W-20, 5W-30, 10W-30, 10W-40, 15W-40, 20W-50

For more information, call (281) 577-5043.

unique seal conditioning agents that give flexibility back to seals and allows them to function better. It helps slow down or, in some cases, even stop leaks. I've seen case studies where owners of very worn engines have seen a decrease in consumption by switching to high mileage motor oil."

One new motor oil niche is designed to help vehicles that operate in cold climates. Winter blend or 'start-up' motor oils are now offered by at least three motor oil manufacturers.

"In northern climates, people treat the onset of winter by preparing their vehicle for cold weather. When we did our consumer work, a lot of people had concerns about their vehicle's cranking ability, oil flow and battery life in cold weather," Newsom said. "We took that information and designed a product able to flow under extremely low conditions. Our experiments were conducted at minus-30° Celsius. Our data showed that our Winter Blend 5W-30 motor oil moves much faster through an engine than conventional oil. The oil gets up to pressure as much as three times faster. We also did power drain studies and determined that the amp draw from the battery was about 20 to 25 percent less with winter oil than with conventional oil. In cold conditions, winter oils are easier on batteries and starters."

And motor oil companies aren't finished creating motor oils for specific niche markets.

"We have one or two new products under development," Newsom said.

How does the availability of so many synthetic and specialty motor oils benefit fast lube operators?

"The lube operator now has a product slate that is broader and represents the real needs of consumers," Newsom said. "These oils are designed to meet conditions that specific vehicles will see. Operators are able to meet those specific needs, resulting in happy customers." ♦



Specialty/Synthetic Oils Offered:

Specifications Met:

Grades Available:

Formula Shell Synthetic Blend	API: SL ILSAC: GF-3	5W-30, 10W-30
Formula Shell Full Synthetic	API: SL ILSAC: GF-3	5W-30, 10W-30
Formula Shell High Mileage	API: SL ILSAC: No	10W-30, 10W-40
Pennzoil High Mileage Vehicle	API: SL ILSAC: No	5W-30, 10W-30, 10W-40
Pennzoil SUV, Truck and Minivan	API: SL (5W-30, 10W-30, 15W-40) ILSAC: GF-3 (5W-20, 5W-30, 10W-30)	5W-20, 5W-30, 10W-30, 5W-50
Pennzoil Synthetic	API: SL ILSAC: GF-3 (5W-20, 5W-30, 10W-30)	5W-20, 5W-30, 10W-30, 5W-50
Quaker State Higher Mileage Engine	API: SL ILSAC: No	5W-30, 10W-30, 10W-40, 20W-50
Quaker State Synthetic Blend for 4x4s, SUVs and Trucks	API: SL ILSAC: GF-3 (5W-30, 10W-30)	5W-20, 5W-30, 10W-30, 10W-40, 15W-40
Quaker State Synthetic Blend for High Horsepower Engines	API: SL ILSAC: GF-3 (5W-30, 10W-30)	5W-30, 10W-30, 20W-50
Quaker State Full Synthetic for Advanced Engines	API: SL ILSAC: GF-3 (5W-20, 5W-30, 5W-50)	5W-20, 5W-30, 10W-30, 5W-40 (Euro), 5W-50
Quaker State Winter Synthetic Blend	API: SL ILSAC: GF-3	5W-30

For more information, call 1-800-BESTOIL.



Specialty/Synthetic Oils Offered:

Specifications Met:

Grades Available:

Valvoline SynPower Motor Oil (Full Synthetic)	API: SL, CF ILSAC: GF-3 (5W30, 10W-30)	5W-30, 5W-40, 10W-30, 20W-50
Valvoline DuraBlend Motor Oil (Synthetic Blend)	API: SL, CF ILSAC: GF-3 (5W-20, 5W-30, 10W-30)	5W-20, 5W-30, 10W-30, 15W-40, 20W-50
Valvoline MaxLife Motor Oil (High Mileage)	API: SL ILSAC: No	5W-30, 10W-30, 10W-40, 20W-50

For more information, call (859) 357-7777.