Trusted synthetic base stock for your premium lubricants

Formulators of finished automotive and industrial lubricants face difficult challenges. The marketplace demands enhanced performance capabilities, improved flow at low temperatures and better durability. For trusted solutions, they can turn to our portfolio of PAOs, which help meet a wide range of performance requirements for many lubricant applications, such as passenger car engine oils, driveline lubricants, industrial machinery, greases, and heavy-duty truck engines, as well as compliance with European and U.S. incidental food contact regulations.

SpectraSyn™ PAO*

Grade	SG at 15.6/ 15.6°C	KV at 100°C cSt	KV at 40°C cSt	VI	Pour point °C	CCS at A/B cP**	NOACK volatility, wt. %	Flash point (COC) °C
	ASTM D4052	ASTM D445	ASTM D445	ASTM D2270	ASTM D97/ D5950	ASTM D5293	ASTM D5800/ DIN51581	ASTM D92
SpectraSyn 2	0.798	1.7	5.0	N/A	-66	–	–	157
SpectraSyn 2B	0.799	1.8	5.0	N/A	-54	–	–	149
SpectraSyn 2C	0.798	2.0	6.4	N/A	-57	–	–	>150
SpectraSyn 4	0.820	4.1	19.0	126	-66	1,424 A	<14.0	220
SpectraSyn 5	0.824	5.1	25.0	138	-57	2,420 A	6.8	240
SpectraSyn 6	0.827	5.8	31.0	138	-57	2,260 B	6.4	246
SpectraSyn 8	0.833	8.0	48	139	-48	4,800 B	4.1	260
SpectraSyn 10	0.835	10.0	66	137	-48	8,840 B	3.2	266
SpectraSyn 40	0.850	39.0	396	147	-36	–	–	281
SpectraSyn 100	0.853	100.0	1240	170	-30	–	–	283

* Typical properties; actual values will vary; not to be construed as specifications; sales specifications available at exxonmobilsynthetics.com.
**CCS at A/B: A= -35°C, B= -30°C

Performance benefits include:

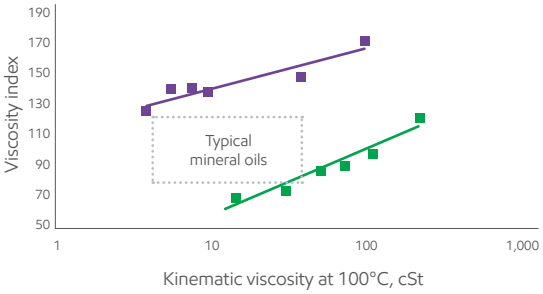
- High viscosity index for enhanced wear protection and energy efficiency
- Low-temperature fluidity for optimal flow
- Low volatility to minimize oil consumption
- Excellent thermal and oxidative stability for long drain intervals
- Low traction forces

Backed by our global supply network and decades of extensive research, SpectraSyn high-viscosity PAO base stocks are available in viscosity grades of 40 and 100 cSt. They are especially well suited for formulating industrial oils that require high stability under demanding conditions. Their high viscosity index (VI) can translate into improved flow at low temperatures and increased film thickness at high temperatures.

SpectraSyn low-viscosity (LoVis) PAO base stocks, available in viscosity grades from 2 to 10 cSt, are used to formulate synthetic lubricants and upgrade mineral oil-based products. Formulators use our LoVis PAOs to gain better low-temperature properties, low volatility and improved oxidative stability compared to mineral oils. LoVis PAOs are well suited for multigrade engine and automotive gear oils, as well as various ISO viscosity grade industrial oils. Find the solutions to your formulation challenges by choosing SpectraSyn PAO base stocks.

	4cSt		6 cSt		8cSt	
	PAO	Group III	PAO	Group III	PAO	Group III
KV@100°C, cSt	4.61	4.62	5.92	6.00	7.86	7.76
Viscosity index	131	129	139	133	138	129
Pour point, °C	<-66	-24	-54	-21	-48	-21
CCS@-30°C, cP	1000	1700	2260	4000	4800	8760
MRV@40°C, cP	3400	151000	6500	Frozen	16200	Frozen

Viscosity index comparison

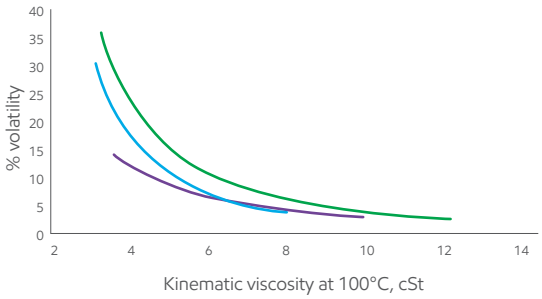


PIB
PAOs

At any given viscosity, the VI of the PAO is significantly higher than PIB and mineral oils.

Test method: ASTM D2270

NOACK volatility



Group II
Group III
PAO

SpectraSyn™ PAOs demonstrate lower volatility at higher temperatures than mineral oils.

Test method: ASTM D5800/DIN51581

Oxidation stability test

PAO vs. mineral oil (2% antioxidant)

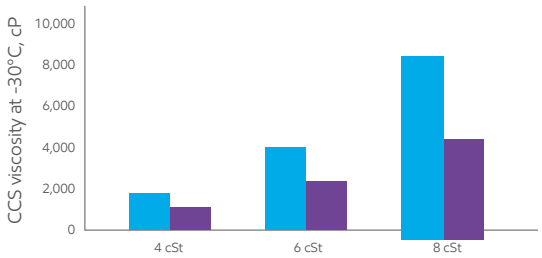
Product	Mineral oil Group II	6 cSt PAO	40 cSt PAO	100 cSt PAO
% Vis change at 100°C	215.7	3.5	2.6	1.8
TAN change, mg	14.5	0.1	0.08	1.1
Lead loss, mg	160.7	0.9	0.1	0.2
Sludge	Moderate	Nil	Nil	Trace

Good oxidative stability is essential for applications at elevated temperatures with air contact.

PAOs show excellent oxidative stability when formulated with suitable antioxidants.

Test conditions: 163°C (325°F), 72 hours
Test method: ExxonMobil method

Cold crank simulator comparison

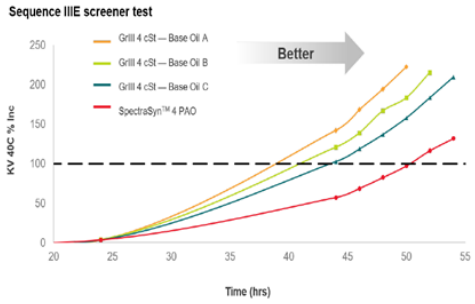


Group III mineral oil
PAO

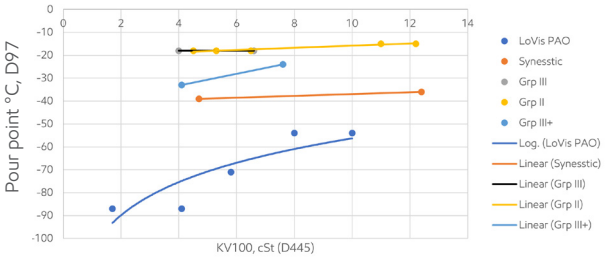
PAOs have significantly lower viscosity at low temperatures compared to a Group III mineral oil.

Test method: ASTM D5293

Thermal — oxidative stability



Low temperature fluidity



Data from tests performed by or on behalf of ExxonMobil

Scan for more information

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