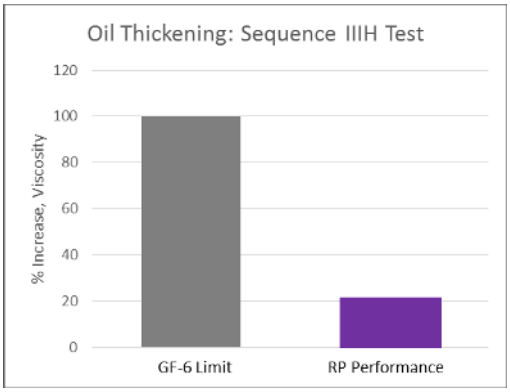
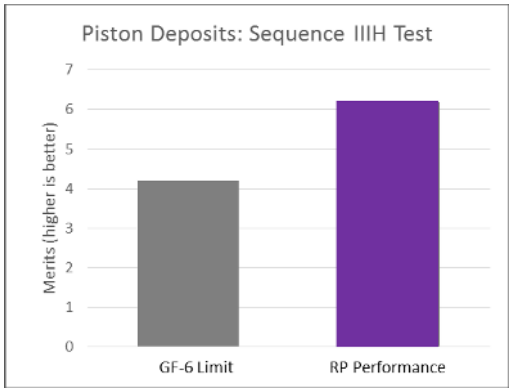
HMX®

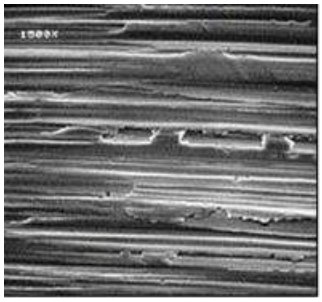
HIGH MILEAGE MOTOR OIL

Royal Purple® HMX® is specifically formulated with a state-of-the-art additive chemistry containing robust zinc/phosphorus anti-wear additives to minimize wear and restore lost engine performance. HMX is chemically enhanced to revitalize hardened seals, reducing oil consumption common in higher mileage engines. Stout detergents remove engine deposits and maintain cleanliness promoting engine longevity. HMX® also provides outstanding LSPI protection for those high-use, high-mileage, late-model engines that recommend API service SN, SN Plus, and SP performance.





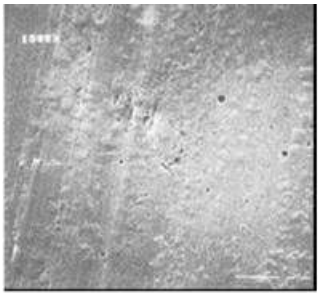
Royal Purple's advanced and proprietary Synerlec® technology provides an exceptional film strength increase compared to other engine oils. The protection provided by Synerlec® dramatically reduces metal-to-metal contact and frictional wear, helping to extended engine life and restore lost engine performance. Synerlec® also provides outstanding oxidation resistance to safely extend oil drains, and an ionic attraction to metal components providing unmatched cold-start wear protection.



New Bearing*



After Leading Synthetic*



After Royal Purple w/ Synerlec*

* Same bearing shell from same engine, magnified 1500x

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8/12/2024

ROYAL PURPLE® SYNTHETIC OIL

TECHNICAL DATA SHEET

PERFORMANCE ADVANTAGES

- BETTER WEAR PROTECTION - Prevents valve-train and chain wear beyond both GM dexos1™* and API SP specifications
- SUPERIOR DEPOSIT CONTROL – Powerful detergents and anti-oxidants clean-up deposits and help prevent new deposit formation
- INCREASED PROTECTION AGAINST LSPI - Advanced additive chemistry helps reduce Low Speed Pre-Ignition in today's turbocharged Gasoline Direct Injection engines.
- OUTSTANDING EMISSIONS EQUIPMENT PROTECTION - Patented additive chemistry minimizes poisoning of catalytic converter
- IMPROVED COMPATIBILITY WITH FUELS CONTAINING ETHANOL - Patented additive technology prevents the white sludge and lubrication starvation that can occur with higher concentration gasoline-ethanol blends
- EXCELLENT SEAL COMPATIBILITY – Keeps seals and gaskets pliable, minimizing oil leaks

PLEASE NOTE: Royal Purple meets API Service SP performance requirements for gasoline engines. Royal Purple recommends this product for any four-cycle gasoline engine with 75,000 miles (120,000 km) or more.

OEM SPECIFICATIONS

SAE 0W-20: Meets API SL, SM, SN, SN Plus & SP; Chrysler FCA US MS-6395; Ford WSS-M2C962-A, -M2C947-A

SAE 5W-20: Meets API SL, SM, SN, SN Plus & SP; Chrysler FCA US MS-6395; Ford WSS-M2C960-A, -M2C945, -M2C930-A; and GM 6094M specifications

SAE 5W-30: Meets API SL, SM, SN, SN Plus & SP; Chrysler FCA US MS-6395; Ford WSS-M2C961-A, -M2C946, -M2C929-A; and GM 6094M specifications

SAE 10W-30: Meets API SL, SM, SN, SN Plus & SP; Chrysler FCA US MS-6395; and GM 6094M specifications

Typical Physical Properties

Property	Test Method	0W-20	5W-20	5W-30	10W-30
Viscosity @ 40°C, cSt	ASTM D445	43.3	46.5	62.8	71.8
Viscosity @ 100°C, cSt	ASTM D445	8.4	8.4	10.9	11.7
Viscosity Index	ASTM D2270	173	158	166	158
Cold Crank Simulator, cP	ASTM D5293	4,700 @-35°C	4,100 @-30°C	4,888 @-30°C	3,836 @-25°C
HTHS, @150°C, cP	ASTM D5481	2.6	2.6	3.3	3.4
Flash Point, °C (°F)	ASTM D92	219 (426)	221 (430)	230 (446)	224 (436)
Pour Point, °C (°F)	ASTM D97	-44 (-47)	-45 (-49)	-45 (-49)	-45 (-49)
TBN, mg KOH	ASTM D2896	7.8	8.9	8.9	9.3

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