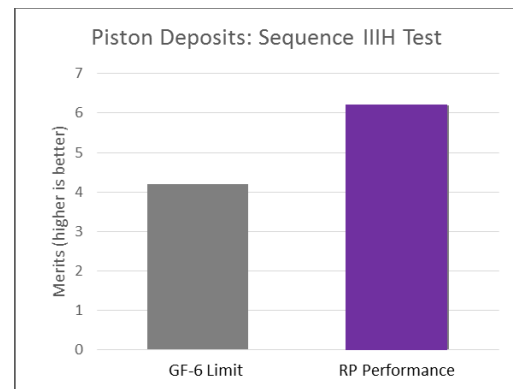
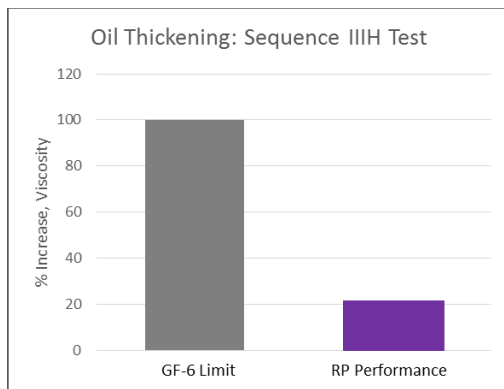
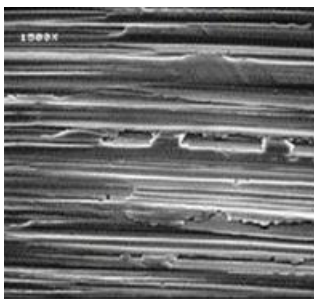


## HMX<sup>®</sup> HIGH MILEAGE MOTOR OIL

Royal Purple<sup>®</sup> HMX<sup>®</sup> 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<sup>®</sup> also provides outstanding LSPI protection for those high-use, high-mileage, late-model engines that recommend API service SN, SN Plus, and SP performance.



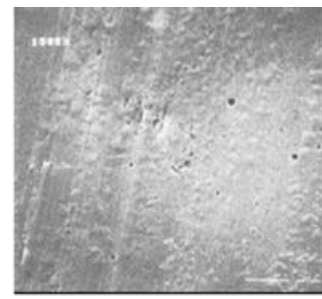
Royal Purple's advanced and proprietary Synerlec<sup>®</sup> technology provides an exceptional film strength increase compared to other engine oils. The protection provided by Synerlec<sup>®</sup> dramatically reduces metal-to-metal contact and frictional wear, helping to extended engine life and restore lost engine performance. Synerlec<sup>®</sup> 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



# 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 warranty 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 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	5W-20	5W-30	10W-30
Viscosity @ 40°C, cSt	ASTM D445	46.5	62.8	71.8
Viscosity @ 100°C, cSt	ASTM D445	8.39	10.9	11.7
Viscosity Index	ASTM D2270	158	166	158
Cold Crank Simulator, cP	ASTM D5293	4,100 @-30°C	4,888 @-30°C	3,836 @-25°C
HTHS, @150°C, cP	ASTM D5481	2.6	3.3	3.4
Flash Point, °C (°F)	ASTM D92	221 (430)	230 (446)	224 (436)
Pour Point, °C (°F)	ASTM D97	-45 (-49)	-45 (-49)	-45 (-49)
TBN, mg KOH	ASTM D2896	8.9	8.9	9.3

To the best of our knowledge, the information contained herein is accurate, but is given without warranty or guarantee. We assume no liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any information or material for the use contemplated, the name of use and whether there is any infringement of patents is the sole responsibility of the user.

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