



## PRODUCT INFORMATION & DATA SHEET

# PRINCE® FS1 SAE 5W-40

P-9 Ester-based passenger car motor oil engineered with advanced High Polarity + Low Volatility (HPLV) Ester Technology and leading-edge additive package to improve engine performance and power output without compromising on complete protection in modern gasoline engines with turbocharger and direct injection (TGDI/GDI), as well as with catalyst operations. This high-performance oil exceeds the stringent API SP performance requirements. It has been tested to provide optimal protection for turbochargers and timing chains, and to shield against power-robbing piston deposits and sludge in critical engine components. Its superior friction properties enable the highest levels of fuel-efficiency and environmental protection.

### Satisfies API SP Performance Benchmarks

- ✓ Optimized protection against stochastic pre-ignition (LSPI) event.
- ✓ Effective timing chain stretch and wear protection of the camshaft and crankshaft.
- ✓ Enhanced anti-friction, anti-wear, fuel efficiency and environmental protection over API SN oils.
- ✓ Long-lasting protection against power-robbing deposits, varnish and sludge.

### Performance Levels

API SP, ACEA A3/B4, BMW LL-01, Chrysler MS-10850, Chrysler MS-10896, Chrysler MS-12991, Fiat 9.55535-M2, Fiat 9.55535-N2, Fiat 9.55535-Z2, Ford WSS-M2C917-A, GM/Opel-LL-B-025, MB 229.3, MB 229.5, Porsche A40, PSA B71 2296, Renault RN0700, Renault RN0710, VW 502.00, VW 505.00

### Key Benefits of P-9 Ester Technology

- Esters feature high compatibility with Group III base stocks and solubility with additives.
- Enhanced solvency, naturally more effective at cleaning and preventing sludge and deposits.
- Higher and more stable viscosity index (VI) providing consistent lubrication at all temperatures.
- Exceptional shear stability maintains film strength and viscosity under mechanical stress.
- Excellent high-temperature stability and oxidation resistance ensuring longer oil life.
- Able to maintain excellent low-temperature properties, allowing superior flowability in winter.
- Low pour point properties protect turbocharger against oil starvation at subzero temperatures.
- Superb friction coefficient provides wear reduction and smoother operation at all driving modes.
- Superior lubricating ability, reducing friction and contributing to fuel efficiency and CO<sub>2</sub> reduction.
- Low volatility (burn-off) rate minimizes evaporation loss and helps reduce oil consumption.

## Areas of Application

Developed for modern passenger car and light-duty vehicle gasoline engines, including multi-valve, supercharged, turbocharged, and direct injection (GDI/TGDI) engines, both with and without catalytic converters and gasoline particulate filters (GPF). The API SP specification is fully backward compatible with earlier standards.

This motor oil is suitable for engines powered by LPG and CNG. However, we recommend using it only in diesel engines without diesel particulate filters (DPF) or exhaust gas recirculation systems, which require oils that meet the API CF specification.

## Service Recommendation

Follow the oil drain interval required by the respective manufacturers. Observe the owner's manual booklet. Recommend to flush before add in new oil. Change oil filter at time of oil change.

## Commercially Available Product Compatibility

Our passenger car motor oil is fully compatible with any synthetic and conventional motor oil. Maximum performance is assured only when used on its own, without being mixed with other oils.

## Typical properties

<u>SAE Viscosity</u>		<u>5W-40</u>
Viscosity Index (VI)	ASTM D2270	176
Viscosity at 100 °C; mm <sup>2</sup> /s	ASTM D445	14.3
Viscosity at 40 °C; mm <sup>2</sup> /s	ASTM D445	88.7
Density at 20 °C; kg/m <sup>3</sup>	ASTM D4052	848.0
HTHS Viscosity at 150 °C; cP	ASTM D4683	3.85
Flash Point; °C	ASTM D92	246
Pour Point; °C	ASTM D97	-42
Sulfated Ash; mass%	ASTM D874	0.97
Total Base Number; mgKOH/g	ASTM D2896	7.0

The information show herein is subject to change without noticed. The product indicated here have been developed by PRINCE LUBRICANTS for use in the areas of applications shown. We reserve all right to alter the characteristics and product properties to align with continually technical development.