HAVOLINE® SYNTHETIC MOTOR OILS

SAE 5W-30, 5W-40, 10W-30

CUSTOMER BENEFITS

Havoline Synthetic Motor Oils deliver value through:

- **Easier cold weather starting** due to excellent low temperature properties of the synthetic base oils.
- **Clean engines and emission systems** resulting from minimal deposits under heavy duty and stop-and-go driving conditions.
- **Long engine life** due to extremely fast lubrication during starting, and better wear protection during all other engine operating conditions.

FEATURES

Havoline Synthetic Motor Oils are designed for those drivers who demand the ultimate in engine protection. They provide an extra measure of protection for your investment in a sport utility vehicle (SUV), high performance, or luxury car. Havoline Synthetic Motor Oils give improved protection to high output, supercharged and turbocharged performance vehicles.

Havoline Synthetic Motor Oils are formulated using 100% synthetic base stocks for the best performance. The improved volatility and stability of synthetic base stocks give reduced oil consumption, faster engine starting (especially in cold weather), and extremely fast lubrication of all moving parts compared to conventional mineral oils. In addition, a special blend of additives protects the engine against harmful deposits and wear.

SAE 5W-30 is the preferred viscosity grade of U.S. automobile manufacturers. It provides exceptional performance in extreme cold temperatures. It meets the requirements of API SM/CF and ILSAC GF-4.

SAE 5W-40 provides the broadest range of protection of the three Havoline Synthetic Motor Oils. It is specifically formulated to meet European requirements and is an officially approved product by BMW, Mercedes-Benz, and Volkswagen. It meets the requirements of API SL/CF.

SAE 10W-30 provides good all-weather performance in the most popular viscosity grade. It meets the requirements of API SM/CF and ILSAC GF-4.

FUNCTIONS

Havoline Synthetic Motor Oils provide excellent wear protection in two ways:

First, due to the unique properties of synthetic base oils, the oil flows faster to critical lubrication points at startup and begins protecting the engine sooner, compared to conventional mineral oils.

Second, Havoline Synthetic Motor Oils are formulated with advanced antiwear additives that provide a protective layer on metal surfaces. This combination of synthetic base stocks and advanced antiwear chemistry means reduced wear and longer engine life when compared to conventional mineral oils.

Havoline Synthetic Motor Oils effectively control sludge that can restrict oil passages and intake screens and cause piston rings to stick. The superior stability of synthetic base oils allows them to resist degradation during high temperature operation and the high level of detergent additives keep sludge and varnish deposits from forming in the engine.

Havoline Synthetic Motor Oils provide excellent performance in both extreme cold and hot conditions. In cold temperatures, Havoline Synthetic Motor Oils flow easily, allowing for faster starts and quicker lubrication. In today's hotter running engines, Havoline Synthetic Motor Oils maintain their viscosity and resist oxidation better than conventional mineral oils.

APPLICATIONS

Havoline Synthetic Motor Oils are recommended for all four-stroke gasoline engines in passenger cars, sport utility vehicles, and light trucks.

Havoline Synthetic Motor Oils **SAE 5W-30** and **10W-30** meet:

- **API Service Categories**
  - SM/CF, SJ/CF, SH[1], SG[1]
  - Energy Conserving for API SL
- **ILSAC** GF-4

1. Obsolete specification

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- **manufacturer's specifications**
  - — **General Motors**
    GM 4718M (Corvette)
    GM 6094M
  - — **Chrysler** MS 6395
  - — **Ford** WSS M2C929-A (SAE 5W-30)
  - — **Japanese** (JASO) VTW
  - — **Peugeot** TU 3M Scuff Test

Havoline Synthetic Motor Oil **SAE 5W-40** meets:

- **API Service Categories** SL/CF, SJ/CF
- **ACEA European Oil Sequence** A3/B3

Havoline Synthetic Motor Oil **SAE 5W-40** is approved by:

- **BMW** Longlife-98
- **Mercedes Benz** 229.1
- **Volkswagen** 505.00

TYPICAL TEST DATA

SAE Grade	5W-30	5W-40	10W-30
CPS Number	*222102*	*222100*	*222101*
MSDS Number	*8602*	*8602*	*8602*
API Gravity	34.7	32.8	34.1
Viscosity, Kinematic cSt at 40°C cSt at 100°C	 59.9 10.6	 87.7 13.7	 61.1 10.0
Viscosity, Cold Crank,°C/Poise	-30/37	-30/50	-25/41
Viscosity Index	167	161	149
Pour Point, °C(°F)	-36(-33)	-51(-60)	-39(-38)
Volatility, NOACK, 250°C, 1 h Evaporation Loss, %,	 13	 8	 7
Sulfated Ash, wt %	0.8	1.2	0.8
Base Number, ASTM D 2896	8.2	8.8	8.2
Phosphorus, wt %	0.078	0.100	0.078
Zinc, wt %	0.088	0.111	0.088

Typical test data are average values only. Minor variations which do not affect product performance are to be expected in normal manufacturing.