



Shield® Armor

Phillips 66® Shield Armor Full Synthetic Motor Oil is a premium quality, full-synthetic automotive engine oil designed to provide maximum engine protection for both turbocharged gasoline direct-injection, conventional gasoline-fueled and flex-fueled passenger cars and light trucks under all operating conditions. It is particularly recommended for vehicles operating at extreme temperatures or under severe driving conditions, such as towing heavy loads.

Shield Armor Full Synthetic Motor Oil is formulated with synthetic base stocks. The full synthetic formulation provides improved protection against viscosity breakdown and deposit formation at high temperatures; lower volatility for reduced oil consumption; and faster oil circulation at low temperatures for easier starting and better protection during cold starts when compared with conventional engine oils.

Shield Armor Full Synthetic Motor Oil exceeds new car warranty requirements as defined by ILSAC GF-5 (except 0W-16). It is uniquely formulated to help combat low speed pre-ignition (LSPI) in turbocharged gasoline direct injection engines. It meets or exceeds "Resource Conserving" requirements for fuel economy improvement, emission system and turbocharger protection, and protection of engines operating on ethanol-containing fuels up to E85. It is backward serviceable for use where API SN or earlier "S" category engine oils are recommended.

Applications

- Turbocharged gasoline direct-injection, conventional gasoline-fueled and flex-fuel passenger cars, light trucks and sport utility vehicles, including gasoline-electric hybrids, especially when operating under severe conditions
- Four-stroke cycle gasoline engines in other mobile or stationary equipment

Shield Armor Full Synthetic Motor Oil is licensed for:

- ILSAC GF-5 (except 0W-16)
- API Service SN Plus with Resource Conserving

Shield Armor Full Synthetic Motor Oil meets or exceeds the requirements of:

- Chrysler MS-6395 (except 0W-16)
- Ford WSS-M2C945-B1 (SAE 5W-20)
- Ford WSS-M2C946-B1 (SAE 5W-30)
- Ford WSS-M2C947-B1 (SAE 0W-20)
- GM6094M (obsolete specification) (does not include 0W-16)

Premium Full-Synthetic Passenger Car Engine Oil





Features/Benefits

- Helps protect against low speed pre-ignition (LSPI) in turbocharged gasoline direct-injection engines (TGDl)
- Exceeds ILSAC GF-5 requirements for new cars under warranty (except 0W-16)
- Enhanced performance benefits at extreme temperatures compared with conventional engine oils
- Outstanding resistance to viscosity and thermal breakdown at high temperatures
- Protects against sludge and varnish formation
- Protects against rust and bearing corrosion
- Low volatility for reduced oil consumption
- Excellent low temperature pumpability for protection during cold starts
- Highly resistant to foaming
- Formulated to protect turbochargers and emission control system catalysts
- Formulated for use in vehicles operating on ethanol-containing fuels up to E85

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Typical Properties					
SAE Grade	0W-16	0W-20	5W-20	5W-30	10W-30
Specific Gravity @ 60°F	0.846	0.847	0.848	0.851	0.852
Density, lbs/gal @ 60°F	7.05	7.05	7.06	7.09	7.10
Color, ASTM D1500	3.0	3.0	3.0	3.0	3.0
Flash Point (COC), °C (°F)	229 (444)	229 (444)	229 (444)	235 (455)	232 (450)
Pour Point, °C (°F)	-43 (-45)	-43 (-45)	-41 (-42)	-40 (-40)	-39 (-38)
Viscosity, Kinematic					
cSt @ 40°C	37.3	46.0	45.4	61.2	63.2
cSt @ 100°C	7.3	8.8	8.4	10.9	10.4
Viscosity Index	163	174	164	171	153
Cold Cranking Viscosity, cP	5,000	5,000	3,650	4,900	3,750
@ (°C)	(-35)	(-35)	(-30)	(-30)	(-25)
High Temp/High Shear Viscosity, cP @ 150°C	2.3	2.6	2.6	3.0	3.1
Sulfated Ash, ASTM D874, wt %	0.96	0.96	0.96	1.02	0.96
Total Base Number (TBN), ASTM D2896	8.0	8.0	8.0	8.6	8.0
Phosphorus, wt %	0.77	0.077	0.077	0.077	0.077
Zinc, wt %	0.085	0.085	0.085	0.085	0.085

Health Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://www.phillips66.com/SDS>