



The First in Synthetics®

Formula 4-Stroke® Marine Synthetic Motor Oil

10W-30 & 10W-40

PRODUCT DESCRIPTION

AMSOIL Formula 4-Stroke® Marine Synthetic Motor Oils are premium quality synthetic formulations engineered for the harsh operating conditions of marine environments. They withstand the intense mechanical action of continuous, high RPM operation to deliver superior viscosity protection. Formula 4-Stroke® Marine Synthetic Motor Oils are specially fortified with a heavy treatment of advanced additives that protect motors against wear, rust and deposits. They excel in both high horsepower applications and all-day trolling conditions.

4-Stroke Outboard Motor Warranty Certified



Formula 4-Stroke® Marine Synthetic Motor Oils are certified by the National Marine Manufacturers Association (NMMA) for use in four-stroke outboard motors. These high quality oils demonstrate outstanding performance, exceeding the NMMA "FC-W" (Four Cycle - Water) specification requirements. Formula 4-Stroke® Marine Synthetic Motor Oils fulfill the warranty requirements of four-stroke outboard motor manufacturers.

- NMMA Registration #FB-30010B 10W-40
- NMMA Registration #FB-30011B 10W-30

Superior Protection Against Engine Wear

Marine engines operate under high loads and RPMs for extended periods of time, causing traditional automotive oils to break down and lose viscosity. To ensure good protection, the NMMA set minimum shear stability requirements for FC-W. AMSOIL Formula 4-Stroke® Marine Synthetic Motor Oils greatly exceed the FC-W shear stability requirements, out-



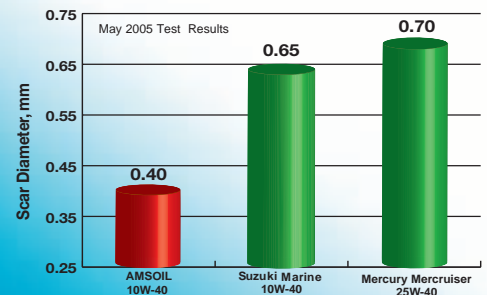
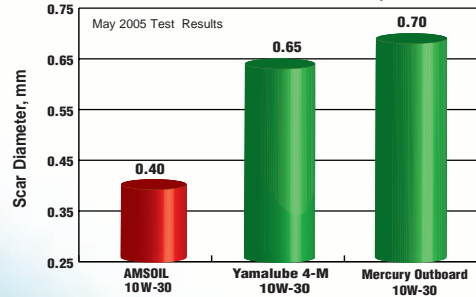
performing competitive oils to deliver a superior lubricating film. Formula 4-Stroke® Synthetic Oils also contain robust anti-wear additives that further reduce wear in metal-to-metal contact regions (see Four-Ball Wear Test graphs).

Excellent Anti-Rust Performance

Marine engines are prone to rust, leading to uncontrolled wear and premature engine failure. However, good rust protection is not natural to engine oil. It comes only by design. Formula 4-Stroke® Marine Synthetic Motor Oils are fortified with a special anti-rust agent, even more than required to pass stringent NMMA FC-W anti-rust testing.

Four Ball Wear Test

The smaller the wear scar, the better the protection.



TYPICAL TECHNICAL PROPERTIES

AMSOIL Formula 4-Stroke® Marine Synthetic Motor Oils (WCT & WCF)

	WCT (10W-30)	WCF (10W-40)
Kinematic Viscosity @ 100°C, cSt (ASTM D-445)	11.7	14.1
Kinematic Viscosity @ 40°C, cSt (ASTM D-445)	74.5	93.8
Viscosity Index (ASTM D-2270)	152	154
Pour Point °C (°F) (ASTM D-97)	-48 (-54)	-46 (-51)
Flash Point °C (°F) (ASTM D-92)	236 (457)	234 (453)
Viscosity Retention, % (ASTM D-6278 Kurt Orbahn, 30 cycles)	99.14%	99.65%
High-Temperature/High-Shear Viscosity after 30 cycles (ASTM D-4683 @ 150°C, 1.0 X 10 ⁶ s ⁻¹), cP	3.6	4.5
Four-Ball Wear Test (ASTM D-4172 @ 40 kgf, 150°C, 1800 rpm, 1 hr), Scar, mm	0.40	0.40
Noack Volatility, % weight loss (g/100g) (ASTM D-5800)	4.8	6.4
Total Base Number	10.5	10.5
NMMA FC-W Salt Fog Corrosion Test (SFT)	Pass	Pass

Applications

AMSOIL Formula 4-Stroke® Marine Synthetic 10W-30 and 10W-40 Motor Oils are recommended for gasoline-fueled four-stroke outboard, inboard, inboard/outboard (I/O) and personal watercraft motors. Use the appropriate viscosity grade where specified in the following:

Four-stroke outboard motors: Honda®, Mercury®, Yamaha®, Johnson®/Evinrude®, Bombardier/BRP®, Suzuki®, Nissan®, Tohatsu®

Inboard and I/O: Mercruiser®, Volvo Penta®, OMC®, Chrysler® Marine, Crusader®, Marine Power®, Chevrolet®, Ford®

Personal Watercraft: Honda®, Yamaha®, Bombardier/BRP® (Sea-Doo®), Polaris®

Note: AMSOIL Formula 4-Stroke® Marine Synthetic 10W-40 is recommended for use in place of 25W-40 as specified by Mercury®.

Note: AMSOIL Formula 4-Stroke® Marine Synthetic 10W-30 is recommended for use in place of 5W-30 as specified by Honda®.

NMMA FC-W • API SL

Service Life

- **Four-stroke outboard motors and personal watercraft applications:** Due to potential fuel dilution or water contamination, change oil at the engine or watercraft manufacturer recommended interval.
- **Inboard and I/O applications:** Change oil at two times the engine manufacturer recommended interval or one year, whichever comes first.

Mixing AMSOIL

AMSOIL Formula 4-Stroke® Marine Synthetic Motor Oils are compatible with conventional and synthetic motor oils. Mixing AMSOIL motor oils with other oils will, however, shorten the oil life expectancy and reduce the performance benefits. AMSOIL does not support extended drain intervals where oils have been mixed.

Aftermarket oil additives are not recommended for use with AMSOIL motor oils.

Health & Safety

This product is not expected to cause health concerns when used for the intended application and according to the recommendations in the Material Safety Data Sheet (MSDS). MSDS's are available upon request at 715-392-7101 or via the Internet at www.AMSOIL.com. **Keep Out of Reach of Children.** Don't pollute. Return used oil to collection centers.



AMSOIL products and Dealership information are available from your local AMSOIL Dealer.

