



The First in Synthetics®

# Series 3000 Synthetic 5W-30 Heavy Duty Diesel Oil

## Maximum Fuel Economy and Excellent Anti-Wear Protection



### PRODUCT DESCRIPTION

AMSOIL Series 3000 100% Synthetic 5W-30 Heavy Duty Diesel Oil (HDD) delivers extraordinary lubrication in both diesel and gasoline engines found in commercial, fleet and personal vehicles. By combining the industry's premier synthetic technology with AMSOIL premium additives, AMSOIL HDD exceeds the higher performance demands of modern engines. It withstands the stress of higher heat, higher acid levels and excessive soot loading found in EGR-equipped engines. AMSOIL Series 3000 Synthetic 5W-30 Heavy Duty Diesel Oil consistently outperforms conventional and synthetic diesel oils for long-lasting performance and protection.

AMSOIL, the leader in automotive synthetic lubrication, produced the world's first API-qualified synthetic motor oil in 1972. Trust the extensive experience of AMSOIL *The First in Synthetics*® to do the best job protecting your engine.

### Extends Drain Intervals

AMSOIL HDD can extend drain intervals far beyond those recommended for conventional oils. Its unique synthetic formulation and long-drain additive system deliver the best possible engine protection, cleanliness and performance over extended drain intervals, reducing vehicle maintenance and waste oil disposal costs.

### Maximizes Fuel Economy

AMSOIL Synthetic 5W-30 Heavy Duty Diesel Oil is energy efficient for reduced fuel costs. Its low viscosity minimizes "drag" associated with high viscosity oils, allowing the engine to operate more freely, maximizing power and fuel economy.

### Unsurpassed Protection Against Engine Wear

In the Four-Ball Wear Test (ASTM D-4172B) AMSOIL HDD demonstrated better anti-wear performance than com-

petitive petroleum and synthetic oils. Even under high temperatures and pressures, its superior film strength and anti-wear additives help prevent metal-to-metal contact. AMSOIL HDD reduces ring wear, cylinder bore polishing, oil consumption and valve train wear for improved engine life and lower maintenance costs.

### Controls Soot Thickening and Wear

AMSOIL Synthetic 5W-30 Heavy Duty Diesel Oil is heavily fortified with detergent/dispersant additives and is naturally resistant to soot. It keeps soot particles suspended independently, preventing them from attaching together to form larger, wear-causing particles. Viscosity increase is minimized and soot-related wear is controlled.

### Reduces Oil Consumption and Emissions

AMSOIL HDD loses only 7.6% of its mass to high temperature volatility (evaporation) in the NOACK test, outperforming all conventional oils. Because less oil vapor passes into the combustion chamber, oil consumption and emissions are reduced. Additionally, lower volatility helps AMSOIL HDD retain its viscosity after high-temperature service for continued dependable protection and excellent fuel economy.

### Excels in Extreme Temperatures

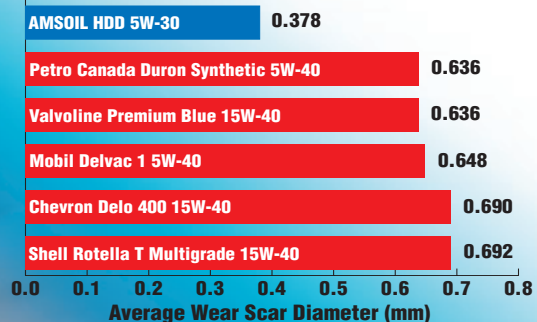
AMSOIL Synthetic 5W-30 Heavy Duty Diesel Oil resists thermal (heat) breakdown, oxidation and sludge formation better than conventional oils. And unlike conventional petroleum oils, AMSOIL HDD contains no wax. It stays fluid down to -50°C (-58°F) for improved cold-temperature oil flow, reduced bearing wear and easier starting.



### Four Ball Wear Test

(ASTM D-4172B)

40 kg pressure @ 150° C, 1800 rpm for 1 hour duration



As tested by an independent lab in November 2004

## TYPICAL TECHNICAL PROPERTIES

### AMSOIL Series 3000 Synthetic 5W-30 Heavy-Duty Diesel Oil (HDD)

Kinematic Viscosity @ 100°C, cSt (ASTM D-445)	11.4
Kinematic Viscosity @ 40°C, cSt (ASTM D-445)	65.4
Viscosity Index (ASTM D-2270)	170
Cold Crank Simulator Apparent Viscosity @ -30°C, cP (ASTM D-5293)	5271
Pour Point °C (°F) (ASTM D-97)	-50 (-58)
Flash Point °C (°F) (ASTM D-92)	226 (439)
Fire Point °C (°F) (ASTM D-92)	240 (464)
Noack Volatility (ASTM D-5800) 250°C for 1 hour, % weight loss	7.6
High Temperature/High Shear Viscosity, cP, 150°C, 1.0 x 10 <sup>6</sup> s <sup>-1</sup> (ASTM D-4683)	3.4
Four-Ball Wear Test (ASTM D-4172: 40kgf, 150°C, 1800 rpm, 1 hr.) Scar, mm	0.38
Total Base Number	12.1

## APPLICATIONS

AMSOIL Synthetic 5W-30 Heavy Duty Diesel Oil is recommended for diesel engines and other applications requiring any of the listed worldwide specifications and gasoline engines requiring API SL, SJ, SH ... or ACEA A3.

- API CI-4+, CF, CF-2, SL • ACEA A3/B3, E2 • Global DHD-1
- JASO DH-1 • Mack EO-M+, EO-N Premium Plus '03 • DDC Power Guard 93K214 • Caterpillar ECF-1-a, ECF-2 • Cummins CES 20071, 20072, 20076, 20077, 20078 • Volvo VDS-2, VDS-3 • MB 228.1, 228.3, 229.1 • MAN 271/3275 • MTU Type 2

## MIXING AMSOIL

AMSOIL HDD is compatible with conventional and synthetic motor oils. Mixing AMSOIL motor oils with other oils, however, will 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.

## SERVICE LIFE

AMSOIL Synthetic 5W-30 Heavy Duty Diesel Oil is recommended for extended drain intervals in unmodified, mechanically-sound vehicles or equipment as follows:

### Diesel Engine Service

- **Normal Service** – Up to 25,000 miles or one year, whichever comes first, or longer based on oil analysis.
- **Severe Service** – Up to 15,000 miles or one year, whichever comes first, or longer based on oil analysis.

### Gasoline Engine Service

- **Normal Service** – Up to 25,000 miles or one year, whichever comes first, or longer based on oil analysis.
- **Severe Service** – Up to 15,000 miles or one year, whichever comes first, or longer based on oil analysis.

AMSOIL Ea and Donaldson Endurance Full-Flow Oil Filters are designed for extended drain intervals. They stop smaller particles, have less restriction and last longer than regular filters. For best performance, use AMSOIL Ea or Donaldson Endurance Oil Filters.

AMSOIL Ea By-Pass Oil Filters are specialized for the removal of small, wear-causing dirt particles, thereby extending engine life. AMSOIL encourages using an AMSOIL Ea By-Pass Filtration System for maximum engine and oil life.

**OIL ANALYZERS INC.**, 715-395-0222, is a division of AMSOIL that provides cost-effective, quality oil analysis services.

For more information on product applications and service life, refer to the AMSOIL *Product Recommendation and Drain Interval Guide* (G1490).

## 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). An MSDS is available upon request at 715-392-7101 or via the Internet at [www.amsoil.com](http://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.



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