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DATA BULLETIN

The First in Synthetics®

Signature Series Max-Duty Synthetic Diesel Oil

Maximum-duty protection for your hardest-working diesel engines



Protect your investment in diesel power and confidently extend drain intervals with our top-grade synthetic diesel oil. AMSOIL Signature Series Max-Duty Synthetic Diesel Oil delivers **6X more wear protection***, delivering the extra protection your diesel deserves. Advanced synthetic technology provides excellent viscosity control and outstanding extreme-temperature performance, while minimizing oil consumption. The result: protection that's boosted to the max.

Maximum Engine Protection

Wear on rings and cylinder liners leads to increased oil consumption and loss of compression, resulting in reduced horsepower and fuel economy. Independent testing shows Signature Series Max-Duty delivers 6X more wear protection than required by the Detroit Diesel DD13 Scuffing Test for Specification DFS 93K222, delivering extra protection so you can push your diesel with peace of mind.

Viscosity Control

Using top-tier synthetic base oils, Signature Series Max-Duty is naturally resistant to oxidation and the thickening effects of soot contamination. That, along with boosted detergent/dispersant additives, keeps soot particles suspended independently, helping prevent the formation of larger, wear-causing particles. Viscosity increase is minimized and soot-related wear is controlled. Lower volatility also helps Signature Series Max-Duty Diesel Oil retain its viscosity after high-temperature service for maximum engine protection and efficiency.

Excels in Extreme Temperatures

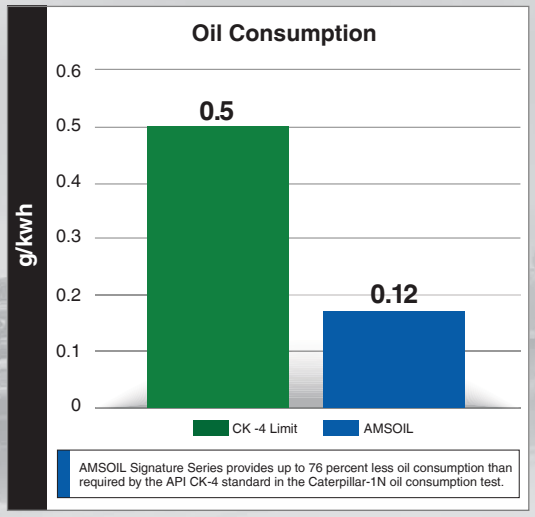
Signature Series Max-Duty Synthetic Diesel Oil resists thermal (heat) breakdown better than conventional and competing synthetic diesel oils. Unlike conventional oils, Signature Series contains no wax, staying fluid in sub-zero temperatures for easier starting, improved oil flow and reduced wear. Signature Series 0W-40 (DZF) has a broad viscosity range that offers 4X better cold-cranking ability than a 15W-40, making it excellent for use in both hot-operating engines and cold-weather starting extremes.

Minimizes Oil Consumption

Signature Series Max-Duty has a low rate of volatility (burn-off), reducing oil consumption during operation and passing less oil vapor into the combustion chamber. It provides up to 76 percent less oil consumption than required by the API CK-4 standard in the Caterpillar-1N oil consumption test.



Detroit Diesel DD13 Scuffing Test for Specification DFS 93K222



*Based on independent testing in the Detroit Diesel DD13 Scuffing Test for specification DFS 93K222 using 5W-30 as worst-case representation

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Order by Phone 1-800-956-5695 - Give Operator Reference #5983322

TYPICAL TECHNICAL PROPERTIES

AMSOIL Signature Series Max-Duty Synthetic Diesel Oil

	5W-30 (DHD)	0W-40 (DZF)	5W-40 (DEO)	15W-40 (DME)
Kinematic Viscosity @ 100°C, cSt (ASTM D445)	12.0	15.7	15.4	15.6
Kinematic Viscosity @ 40°C, cSt (ASTM D445)	72.3	92.8	94.5	112.4
Viscosity Index (ASTM D2270)	162	180	173	147
CCS Viscosity @ °C, cP (ASTM D5293)	5384 (-30)	5776 (-35)	5555 (-30)	4134 (-20)
Pour Point, °C (°F) (ASTM D97)	-43 (-45)	-48 (-54)	-43 (-45)	-40 (-40)
Four-Ball Wear Test (ASTM D4172), Scar, mm	0.45	0.47	0.46	0.45
NOACK Volatility, % weight loss (g/100g) (ASTM D5800)	8.6	10.9	9.2	5.1
Total Base Number (ASTM D2896)	10.1	10.1	10.1	10.1
High-Temperature/High-Shear Viscosity, cP (ASTM D5481)	3.5	4.2	4.3	4.5
Sulfated Ash Content, wt. %	0.91	0.99	0.99	1.0

APPLICATIONS

Use in diesel engines and, where appropriate, gasoline engines requiring any of the following specifications:

	5W-30 (DHD)	0W-40 (DZF)	5W-40 (DEO)	15W-40 (DME)
API CK-4/SN, CJ-4, CI-4+, CF	X	X	X	X
API SN+	X			
Volvo VDS4.5, VDS4, VDS3	X	X	X	X
Mack EOS-4.5, EO-O	X	X	X	X
Renault RLD-4, RLD-3	X	X	X	X
Cummins CES20086, CES20081	X	X	X	X
Caterpillar ECF-2, ECF-3, ECF-1-a	X	X	X	X
DDC 93K218, 93K215, 93K214	X	X	X	X
DFS 93K222	X		X	X
ACEA E9, E7	X	X	X	X
ACEA E6	X			
MB 228.31	X		X	X
MB 228.51	X			
MAN 3575	X	X	X	X
MAN 3677	X			
MTU Type 2.1, II, I	X	X	X	X
MTU Type 3.1	X			
JASO DH-2	X	X	X	X
Allison TES439			X	
Deutz DQC III-10LA	X	X	X	X
Scania LA-2	X		X	X
Chrysler MS 10902	X	X	X	X
Ford WSS-M2C171-F1		X	X	X
Ford WSS-M2C214-B1	X			
Deutz DQC IV-10LA	X			

COMPATIBILITY

AMSOIL Signature Series Max-Duty Synthetic Diesel Oil is compatible with other conventional and synthetic engine oils. Mixing AMSOIL diesel oils with other oils, however, will shorten the oil's life expectancy and reduce its performance benefits. AMSOIL does not support extended drain intervals where oils have been mixed.

Aftermarket oil additives are **not recommended** for use with AMSOIL synthetic diesel oils.

SERVICE LIFE

Diesel Engine Service Life

Heavy-Duty On-/Off-Road: Three times (3X) OEM[1] recommendation, not to exceed 60,000 miles/600 hours or one year, whichever comes first.

Turbodiesel Pickup: Two times (2X) OEM[1] recommendation, not to exceed 25,000 miles or one year, whichever comes first.

Competition Service Life: Provides lasting protection for multiple events. Use oil analysis to determine appropriate drain intervals.

Gasoline Engine Service Life

Two times (2X) OEM[1] recommendation, not to exceed 15,000 miles or one year, whichever comes first.

Drain intervals may be extended further with oil analysis.

Note: *Extended drain intervals are not recommended for performance-modified engines, when using biofuels containing more than 10 percent ethanol or 15 percent biodiesel (B15) or for 2007-2009 Caterpillar* C13 and C15 on-highway engines. Extend drain intervals beyond OEM recommendations in these instances only with oil analysis.* ***Note:*** *2007-2010 Dodge**, Ford** and GM** turbodiesel pickups are also not recommended for extended drain intervals when using Signature Series Max-Duty 5W-30 Diesel Oil (DHD).*

[1] Refer to your owner's manual for OEM drain interval recommendations and guidelines for severe and normal service.

HEALTH & SAFETY

This product is not expected to cause health concerns when used for the intended application and according to the recommendations in the Safety Data Sheet (SDS). An SDS is available online at www.amsoil.com or upon request at (715) 392-7101. **Keep Out of Reach of Children**. Recycle used oil and bottle.

AMSOIL PRODUCT WARRANTY

AMSOIL products are backed by a Limited Liability Warranty. For complete information visit www.amsoil.com/warranty.aspx.

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