

"PERFORMANCE UNDER PRESSURE"

NEO
SYNTHETIC
OIL

First in Synthetic Lubricants

Engine Oil
Diester Base 100% Synthetic
SAE 20W-50, Heavy Duty
API Service CD/SG; ACEA

Product Data Sheet

- **A Clean Environment product**
- **CF-4 performance**
- **Reduces friction**
- **Resists heavy stress**
- **High performance rated**
- **Runs cooler**
- **Superior film strength**
- **Resists high temperature**
- **Extends drain interval**
- **Extends engine life**

Product Description:

NEO SAE 20W-50 is designed for high performance engines of all kinds, and for any engine that is pushed to the limit of performance and high temperature. Excellent for trailer towing in high temperature and for racing engines, in any engine that can use this viscosity grade. High speed, high temperature, and heavy load are tolerated by this oil, and it will resist breakdown under these conditions far more than a petroleum base oil. The NEO 20W-50 base stock is diester 100% synthetic. To that base is added NEO's balanced blend of additives.

This oil is designed for use in racing engines, but it has the full additive package necessary to protect a street engine in typical traffic. It is also an excellent choice for "mixed fleet" used where this viscosity grade is desired.

NEO 20W-50 is *the* choice for engines being worked to their limit, particularly in hot temperatures. It will per-

form equally well in gasoline, LPG or diesel fueled engines. It provides lubrication over a wide temperature range, for extended periods, and reduces engine wear and oil consumption. In addition, it has an inherently higher film strength than petroleum oils, thereby providing added protection to the bearing surfaces of the engine. NEO 20W-50 will be that extra measure of safety when you need it the most. It will reduce engine wear and increase power output because of its superior lubricity. Its low temperature pour point (-40°F) allows faster starting and warmup, saving wear on starters and batteries.

In this type of service, it is particularly important to use a lubricant that will give maximum resistance to galling or welding of bearing surfaces and to scoring of cylinder walls. NEO 20W-50 does this.

Clean Environment

The engine oil you use can help reduce hydrocarbons in the environment and can reduce your operating costs as well: By getting more miles per gallon through reduced friction in the engine, by reducing the burned oil in the atmosphere, and by reducing the amount of used oil for disposal. NEO has documented proof that their engine oils will accomplish these goals, and you can feel confident that you are doing your best to improve our quality of life. Further, as you use less gas and oil, it is costing you less to operate, and you can expect the NEO lubricants to reduce your maintenance cost by providing the best lubrication you can get.

Extended Drain Interval:

NEO 20W-50 is designed to last 3 to 6 times longer than petroleum base oils. An additive package is formulated specifically for this long service period in the diester synthetic. In addition, the diester base itself acts as a natural detergent and thereby aids the additive package and extends the life of the base stock.

While petroleum oils may meet the requirements when first new, the heat of heavy load begins to "wear out" the oil immediately. The heat of operation acts on conventional petroleum oil in the crankcase much as it does in the refining distillation process, causing it to

break down into lighter and heavier molecules. The lighter distillates are burned or escape to pollute the air, while the heavier products form sludge, gum and varnish. Not only does the petroleum stock deteriorate over extended periods, but the additives — particularly the detergent — are consumed.

NEO synthetic oil will not break down under engine heat because it is made of thermally stable material. The single molecular structure of the NEO diester provides better and more consistent lubricating properties than petroleum. This reduces friction, which further reduces engine temperature.

Changing to NEO Engine Oil:

- **New Engine:** Break in the engine with petroleum oil for about 6,000 miles. Drain the oil; replace the filter with a synthetic-rated filter and fill with NEO.
- **New Vehicle Warranty:** NEO 20W-50 meets manufacturer's warranty requirements for the stated API service rating. If the owner prefers, the NEO can be changed at the manufacturer's recommended intervals.
- **Older Engine:** Drain the oil; replace the filter with a synthetic-rated filter and fill with NEO. Expect oil contamination at first while the oil passages in the engine are being cleansed. If the old oil was overly dirty, change the new filter after 2,000 miles, then again at 5,000 miles. Resist temptation to use a cheap filter for this cleansing process; the finer filtering of the synthetic-rated filter is

needed for a thorough cleansing.

- **Service Life:** Replace the NEO 20W-50 after 3 to 6 times the normal drain interval. Change the oil filter three times in that period, and in dusty climates, both should be changed more often. Changing the air filter regularly is equally important.

- **Mixing:** NEO 20W-50 synthetic will mix with petroleum oils; it is not necessary to flush the engine when NEO is first used. However, mixing a large amount of petroleum with NEO will reduce the qualities of the NEO and will shorten the service life. ***This is not recommended.*** Using aftermarket oil additives is not necessary and may produce unpredictable results. ***Use of aftermarket additives voids the NEO warranty.***

Specifications: *

NEO SAE 20W-50 Engine Oil meets and exceeds requirements for API (American Petroleum Institute) service classifications CD/SG, with CF-4 performance, European Standard ACEA, and meets military specifications MIL-L-46152D and MIL-L-2104E. It meets and exceeds the requirements for Cummins NTC-400 (400 hour), Mack EO-K/2, Mack T-7 Soot Control, Caterpillar T0-2, Allison C-4 Quality, and Detroit Diesel 1% ash maximum.

Caution: Use the viscosity grade recommended by the engine manufacturer for the expected environment.

<u>Specification</u>	<u>Value</u>	<u>Test Method</u>
Viscosity Index	180	ASTM D-2270
Viscosity:		
Cold Cranking @ -10°C	3980 cP	ASTM D-2602
Kinematic @ 100°C	20.6 cSt	ASTM D-445
Viscosity Increase	6%	Seq. III-C
	(400% allowed)	
Total Base Number (TBN)	9	ASTM D-2896
	(exceeds engine requirements by about 3 times)	
Sulfated Ash	0.8	ASTM D-874
Flash Point	470°F	ASTM D-92
Fire Point	520°F	
Pour Point	-40°F	ASTM D-97
Film Strength	About 6 times that of petroleum.	
Density	@ 60°F 7.20 pounds/gallon	

* Subject to normal manufacturing tolerances

Your NEO Dealer: