



UNIVERSAL PLUS ENGINE OILS--Multigrades (CI-4, HD Engine Oil)

UNIVERSAL PLUS engine oils are superior quality engine oils blended from highly refined paraffinic mineral oils and specially selected additives. They are designed to meet the requirements of most major diesel engine manufacturers including EGR (exhaust gas recirculation) engines. They further meet the performance requirements of gasoline engines.

Today's diesel engines develop greater power per cubic inch of piston displacement than ever before and yet have increased pollution control measures on them. Also, today's driving conditions result in increased idling time. These factors create extreme demands on today's diesel engine oils. **UNIVERSAL PLUS** engine oils provide extra protection in low temperature operation as well as grueling high speed, high temperature operation.

UNIVERSAL PLUS engine oils have a total base number (TBN) of 10.5. High TBN reduces piston deposits and maintains power of low emission engines. It also enables long oil drain intervals while keeping soot, sludge and varnish commonly encountered in engines operating on low-sulfur diesel fuel with EGR under control. The exceptional soot control and detergency reduces deposits, especially in the critical piston ring grooves. The result is long engine life and lower maintenance cost.

UNIVERSAL PLUS engine oils exhibit excellent low temperature flow properties that help reduce engine wear at cold start-up when engines are most susceptible to damage.

The multi-purpose aspect of **UNIVERSAL PLUS** engine oils benefits fleets with varying types of equipment. These engine oils are suitable for nearly all engines which do not have EGR systems. They allow fleet operators to satisfy both the warranty and operating requirements while maintaining the least number of lubricants in inventory.

UNIVERSAL PLUS 15W-40 meets the Mack EO-M Plus specification. In addition, **UNIVERSAL PLUS** engine oils exceed the performance requirements

of API CI-4/CH-4/CG-4/CF-4/CF/SL, ACEA E5/B3/A2, Caterpillar ECF-1, Cummins CES 20078, Mercedes Benz 228.3, Detroit Diesel/MTU Type 1 and 2, MAN 3275 and 271, Volvo VDS-3 and Global Specification DHD-1.

BENEFITS:

- 10 TBN - REDUCED ENGINE WEAR AND DEPOSITS
- EXCELLENT FLOW AT LOW TEMPERATURE
- CLEAN ENGINES
- LONG DRAIN INTERVALS
- IDEAL FOR MIXED FLEETS

APPLICATIONS:

UNIVERSAL PLUS engine oils are recommended for both diesel and gasoline engines that operate on and off-highway. They are also suitable for many transmissions, air compressors, and other applications requiring high quality engine oil. **UNIVERSAL PLUS multigrade** engine oils meet or exceed the following requirements:

- API CI-4, CH-4, CG-4, CF-4, CF
- API SL
- Caterpillar ECF-1
- Caterpillar TO-2, Series III
- Caterpillar 3100-3500 & D series
- Chrysler MS 6395-F
- Cummins CES 20078 and 20076
- Detroit Diesel 6V-92TA
- Ford ESE M2C153-E and ESR M2C171-C
- GM 6094-M
- Mack EO-M Plus
- Mercedes Benz 228.3 (SAE 15W-40)
- Volvo VDS 3
- DHD-1
- MAN M 3275 and 271



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TYPICAL CHARACTERISTICS

SAE Viscosity Grade	10W-30	15W-40	20W-50
API Service	CI-4, CH-4, CG-4, CF-4, CF/SL	CI-4, CH-4, CG-4, CF-4, CF/SL	CI-4, CH-4, CG-4, CF-4, CF/SL
Product Code	11813	11854	11825
API Gravity (ASTM D-1298)	29.9	29.6	29.9
Viscosity (ASTM D-445):			
cSt @ 40°C	71.4	112	154
cSt @ 100°C	11.2	14.5	17.5
SUS @ 100°F	385	570	820
SUS @ 210°F	64	78	90
Brookfield viscosity (D 5293)			
cPs @ -25°C (7000 max)	pass	--	-
cPs @ -20°C (7000 max)	--	pass	-
cPs @ -15 C (9500 max)	--	-	pass
Viscosity Index (ASTM D-2270)	142	131	118
Pour Point (ASTM D-97) °F (°C)	-30 (-34)	-25 (-32)	-36 (-33)
Flash Point (ASTM D-92) °F (°C)	410 (210)	420 (216)	410 (210)
Color (ASTM D-1500)	5.5	5.5	4.5
Sulfated Ash (ASTM D-874)	1.1	1.1	1.1
Total Base Number	10.5	10.5	10.5
Other service claims/credentials*			
Allison C-4	-	Yes	-
MIL-PRF-2104G	-	Yes	-
CID A-A-52039B	Yes	-	-
CID A-A-52306-A and 52306	-	Yes	-
Detroit Diesel/MTU Type 1 and 2	-	Yes	-
Navistar TIS-85-6	-	Yes	-
MAN 3275 and 271	-	Yes	-
MB 228.1 and 228.3	-	Yes	-

* No formal approvals were obtained on this listing.

The above data is subject to usual manufacturing variation. For more information and availability, call 1-800-442-LUBE.
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