



# FULL SYNTHETIC HEAVY DUTY SAE 5W-40

## DIESEL/GASOLINE ENGINES

Work Horse® Full Synthetic Heavy Duty SAE 5W-40 Motor Oil is formulated with Group III base oils and highly advanced additive systems which provide maximum protection and performance for your diesel engine. Modern diesel engines using Ultra Low Sulfur diesel fuel and equipped with diesel particulate filters, exhaust gas recirculation, and selective catalytic reduction are producing more power and operate hotter than ever before which puts increased performance demands on the engine oil. The latest API specification CK-4 is designed to meet the needs of all diesel engines, including model year 2017 and newer which will begin to require API CK-4.

- API CK-4 provides better performance in six areas, including: aeration performance, wear protection, oxidation control, acid neutralization, deposit protection, and shear stability when compared to CJ-4
- Improved oxidation performance by over 60% compared to API CJ-4 technology
- High detergency and superior dispersancy keep engines and pistons clean and soot suspended in the oil despite longer drain intervals and increased soot loading
- Higher starting Total Base Number (TBN) 10 provides added oxidation control and protection against acid build-up that can cause rust and oxidation
- Provides outstanding cylinder, bearing and ring wear protection
- Provides excellent TBN retention allowing for increased drain intervals

*Always consult and follow manufacturer's guide for proper SAE grade. Never exceed recommended drain interval without close monitoring through oil analysis.*

Work Horse is a new breed of lubricants designed to stand up to brutal workloads and a wide range of challenging conditions. Born from a 90-year legacy of proven performance and premium products, Work Horse lubricants are formulated using the latest technology and advanced additives to deliver superior results and the protection you demand. Extensive testing in both on-road and off-road environments ensures all Work Horse products meet and exceed major manufacturers' service requirements. Your hard-working equipment needs hard-working oil.



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## Typical Characteristics

PRODUCT	5W-40
Gravity, °API	33.71
Specific Gravity @ 60°F (15.6°C)	0.8565
Viscosity @ 40°C cSt	91.34
Viscosity @ 100°C cSt	14.46
Viscosity Index	167
Pour Point °C (°F)	-45°C (-49°F)
Cold Cranking Simulator at (°C), cP	6290 (-30)
High Temperature / High Shear Vis at 150°C, cP	3.5
Color	2.5
Zinc, wt. %	0.127
Phosphorus, wt. %	0.115
Calcium, wt. %	0.082
Sulfur, wt. %	0.314
Magnesium, wt. %	0.116
Molybdenum, wt. %	0.007
Sulfur, wt. %	0.314
Nitrogen, wt. %	0.124
Pumping Viscosity at (°C), cP	24,113 (-35)
TBN, mgKOH/g	10



## Performance Level

API SN, API SM, API SL  
 API SJ, SH, SG, SF, SE, SD, SC  
 API CK-4  
 CHRYSLER/FIAT MS-10902  
 API CJ-4 APPROVED BY BRAND  
 API CI-4 PLUS, CI-4, CH-4, CG-4, CF-2, CF  
 FORD WSS-M2C171-F1  
 FORD WSS-M2C171-E  
 MACK EO-O PREMIUM PLUS, EO-N PREMIUM PLUS 03, EO-M PLUS, AND PRIOR  
 MACK EOS-4.5  
 CAT ECF-3, ECF-2, ECF-1-A  
 CUMMINS CES 20081, 20077, 20076  
 CUMMINS CES 20086 S  
 DETROIT DIESEL 93K218, 93K215, 93K214  
 DETROIT DIESEL 93K222  
 CID A-A-52306, MIL-PRF-2104G  
 MAN 3275, 270  
 MAN 3575  
 MB 228.3, 228.31  
 MTU TYPE I, TYPE II  
 MTU 2.1 MEETS  
 RENAULT RLD-4  
 VOLVO VDS-4, 3, 2  
 VOLVO VDS-4.5 S  
 GLOBAL DHD-1  
 JASO DH-2  
 ACEA E9, E7, E4, E2  
 ALLISON C-4

Available In:

55Gal Drum, 330Gal, Bulk