



H & B Industries, INC
 Dallas, Texas
 (214) 350-1984

H & B Supply, INC.
 Temple, Texas
 (254) 985-2525

TECHNICAL DATA SHEET

HB-1103

DURAFILM PLUS

MOTOR OIL

DESCRIPTION:

- Revolutionary new motor oil which combines the latest friction and heat reduction additives with the finest quality 100% paraffin-based oils
- Through advanced research and product development this red-colored oil has been formulated to provide maximum protection and performance that far surpass the service requirements of most oils and add years of trouble free performance to your engines, whether gasoline, diesel, natural gas or liquefied petroleum gas engines.
- Designed to ensure optimum performance in a wide variety of mixed fleet equipment under the most adverse operating conditions.
- Exceptionally high film strength and the most modern low ash (1% max.) additive available.
- Provides unusual protection against:

Varnish	Sludge	Wear	Heat
Oxidation	Scoring	High Temperatures	Foam
Rust	Extreme Cold	Friction	Ring Sticking
Acid	Corrosion	Scuffing	

COMPOSITION:

Naturally high viscosity mid-continent base oil blended with a superior additive pack-age which has a long life and proven performance. Blended to meet or exceed the exacting requirement of all engine manufacturers. Additives package contains:

Oxidation Inhibitors	Corrosion Inhibitors	Pour Point
Rust Inhibitors	Silicones	Oiliness Additives
Zinc Dithiophosphates	Anti-Scuff Additives	Dispersant
Detergency Additives	Anti-Wear Additives	Foam Inhibitors
Stabilizing Agents		

Meets or exceeds the requirements of many important tests, including:

- Meets A.P.I. Services CB, CC, CD, CE, CF, SB, SC, SD, SE, SF & SG
- Meets Mil-L-2104D (Supersedes Mil-L-2104C for heavy duty engines and Mil-L-45199B for Supercharge diesel).
- Meets Mil-L-46152B for gasoline and diesel engines.
- Meets Mack EO's Performance (T-6 Test).
- Passes the Tornado Bore Polishing Test
- Exceeds A.S.T.M. Sequence Test IIB, IIIC and VC.
- Turbo tested and has proven to give good performance
- Exceeds the Alkyl Zinc requirements of:

Detroit Diesel (1% ash)	Mack EO-K/2 & EO-J	Mil-L-2104D	Ford & Chrysler
Caterpillar S-3 & TO-2	Volvo B-20	Mil-L-46152B	
International Harvester			

APPLICATIONS:

For industrial, farm, commercial and other automotive engines:

Bulldozers	Corn Pickers	Off-Highway Vehicles
Passenger Cars	Trucks of all types	Graders
Loaders	Tractors	Self-Propelled Farm Implements
Combines	Compressor Drives	Generator Sets
Pipelayers	Shovels	Excavators
Hoists	Pavers	Cranes
Buses	Cotton Pickers	Irrigation Pump Engines
Sugar Cane Cutters	Draglines	Scrapers

SPECIFICATIONS:

SAE Grade	30	40	15W/40	15W/50
API Gravity @60°F	28.1	27.7	27.7	29.1
Pounds/Gallon @60°F	7.383	7.401	7.401	7.337
Specific Gravity @60°F	0.8866	0.8888	0.8888	0.8811

VISCOSITIES:

@ -15°C, cP	-----	-----	2700	3000
@100°C, cSt	12.06	15.23	14.84	17.48
@40°C, cSt	102.35	148.71	108.3	138.0
@210°F, cSt (SUS)	12.43(68.1)	15.70(80.7)	15.29(79)	18.0(90.1)
@100°F, cSt (SUS)	115(533)	168.0(778)	120.3(558)	145.3(673)
Viscosity Index	108	103	142	147
Flash Point, COC, °F (°C)	440(227)	480(249)	415(213)	420(216)
Pour Point, °F (°C)	-15(-26)	-5(-21)	-20(-29)	-201(-29)

CHEMISTRY: Weight %

Zinc	0.143	0.143	0.143	0.143
Sulfated Ash	1.28	1.28	1.28	1.28
Total Base Number	10	10	10	10

1. Detroit Diesel recommends single viscosity oils in their series 92, 71, and 53 engines unless the oil supplier can provide "evidence of satisfactory lube oil performance" for multi-grade oils. HB-1103 Durafilm Plus Super Heavy Duty Multi-grade Motor Oils have provided satisfactory performance in Detroit Diesel Engines for over 20 years.
2. HB-1103's chemistry has more than 10 million miles of field testing in Cummins, Caterpillar, Mack and Detroit Diesel Engines - all with excellent results.
3. HB-1 103 Durafilm Plus Super Heavy Duty Motor Oils are fully qualified for use in turbocharged engines. Consult your operator's manual for proper SAE viscosity grade and API service classification.

NOTE: All HB-1103 Durafilm Plus Super Heavy Duty Motor Oils intended for Heavy Duty Diesel service have a Total Base Number (TBN) of 10. This is in response to Caterpillar's bulletin entitled "Lubricant recommendations changed for all Caterpillar engines to combat effects of fuel sulfur." It states, "If the fuel sulfur content is not available, use an oil with a TBN of 10 in the United States, Canada,' and in the countries where the fuel sulfur content is regulated to 0.5 percent or less by law."