



TECHNICAL DATA

102 Barton Street, St. Louis, Missouri 63104

In-State (314) 865-4100/Out of State 800-325-9962/Fax (314) 865-4107 <http://www.schaefferoil.com>

#107 MOLY BOND X-200 SAE 10 THRU 50

CF-4/CF-2/CF/SM

Moly Bond X-200 Universal Engine Oil is a superior quality universal straight grade motor oil that has been specially formulated to meet the year round service requirement of both heavy duty diesel and gasoline engines, especially those low emission and older heavy duty diesel engines running on low-sulfur fuel.

Moly Bond X-200 is blended from the finest solvent refined severely hydro-finished high viscosity index 100% paraffin base oils available. Blended into these 100% paraffin base oils is an exceptional high performance additive package. This exceptional high performance package provides the Moly Bond X-200 with the following performance benefits.

1. Excellent wear protection of low emission engines and other diesel engines running on low sulfur diesel fuel.
2. Excellent deposit protection of low emission engines and other diesel engines running on low sulfur diesel fuel.
3. Superior soot handling control.
4. Excellent protection against soot loading.
5. Excellent resistance to soot related viscosity increase, filter plugging and soot abrasive wear.
6. Excellent high temperature deposit protection.
7. Increased engine cleanliness.
8. High levels of TBN reserve for extended oil drain capability.
9. Effective neutralization of the corrosive and harmful acids produced during the combustion of high sulfur diesel fuels.
10. Excellent thermal and oxidative stability.
11. A substantial reduction in ring and cylinder wear.
12. A substantial reduction in ring sticking and breakage.
13. Superior valve train-wear protection.
14. Superior low volatility properties.

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15. Substantially reduced oil consumption.
16. Excellent anti-foaming properties.
17. Excellent high temperature/high shear performance in order to provide excellent oil film thickness and engine protection at high operating temperature and shear rates, while minimizing lubricant frictional resistance.
18. Improved engine durability to keep equipment in as-new condition.
19. Increased engine life and reduced maintenance costs due to downtime.

Further blended into the 100% paraffin base oils, and the performance additive package and are two proven frictional modifiers, Micron Moly®, a liquid soluble type of Moly and Schaeffer Mfg's own proprietary additive Penetro®. These two proven frictional modifiers once plated form a long lasting slippery tenacious lubricant film, which prevents the metal surfaces from coming into contact with each other. By preventing metal-to-metal contact, damaging frictional wear is prevented from occurring. This prevention of metal-to-metal contact and reduction in wear results in:

- * **Increased Fuel Economy.**
- * **A Low Coefficient of Friction.**
- * **Significantly Less Bearing, Ring, Piston, Cylinder and Valve-Train Wear.**
- * **Increased Engine Efficiency.**
- * **Increased Engine Durability.**
- * **Increased Engine Life.**
- * **Less Downtime.**
- * **Reduced Maintenance**

Moly Bond X-200 meets and exceeds the following specifications and manufacturer's requirements. MIL-PRE-2104G, MIL-PRE-46152E, API Service Classification CF-4/CF-2/CF/SM, Mack EO-K, Mack EO-K/2, Caterpillar, Cummins, Cummins NTC 400 and double NTC 400, Cummins L-10 and 14L HST, Navistar, J.I. Case, John Deere, Komatsu, Allison C-4, Detroit Diesel, MAN 270, Daimler Benz Sheet 226.0, 227.0, 228.0, Scania, and Volvo.

TYPICAL PROPERTIES

SAE Grade	30	40	50
Viscosity @ 40° C, Cst (ASTM D-445)	105-108	150-170	220-230
Viscosity @ 100° C, Cst (ASTM D-445)	11.00-12.3	14.5-15.5	18.5-21.00
High Temperature High Shear Viscosity @ 150°C, cP (ASTM D-4683)	3.9	4.2	4.5
Viscosity Index (ASTM D-2270)	106	102	102
Flash Point °F/°C (ASTM D-92)	460°/237.8°	509°/265°	500°/260°
Fire Point °F/°C (ASTM D-92)	500°/260°		
Pour Point °F/°C (ASTM D-97)	0°/-18°	10°/-12.2°	20°/-6.7°
Volatility % Loss @ 700° F (ASTM D-2887)	6.5%	7%	7%
Sulfated Ash Content % WT (ASTM D-874)	1.5%	1.5%	1.5%
Total Base Number (ASTM D-2896)	12	12	12
Foam Test (ASTM D-892)			
Sequence I	0/0	0/0	0/0
Sequence II	0/0	0/0	0/0
Sequence III	0/0	0/0	0/0
Sequence IV	0/0	0/0	0/0
Cummins Bench Corrosion Test			
Copper increase, ppm	5	5	5
Lead increase, ppm	42	42	42
Tin increase, ppm	<1	<1	<1
Copper Strip Corrosion (ASTM D-130)	1a	1a	1a