



Bearing Oil M

Phillips 66® Bearing Oil M is a high-quality, rust and oxidation (R&O)-inhibited circulating oil specifically developed for the lubrication of backup roll bearings manufactured by Morgan Construction Company. It meets the performance requirements for “super demulsibility” as defined by Morgan’s Advanced Lubricant Specification, Revision 2.5, for use in hot and cold rolling mill operations.

Bearing Oil M is formulated to provide rapid water separation, excellent oxidation resistance, protection against rust and corrosion, and resistance to foaming. It has excellent water-separating properties to minimize the formation of emulsions in circulating systems subject to contamination with large quantities of water, rolling solutions, dirt and scale. It has excellent oxidation resistance and thermal stability at high temperatures to minimize sludge and varnish formation, and provide long service life. It protects system components against rust and corrosion, and is resistant to excessive foam buildup that can interfere with proper lubrication.

Applications

- Backup roll bearings manufactured by Morgan Construction Company
- Backup roll bearings in hot and cold rolling mills
- Bearing lubrication in steel mills
- Circulating systems where water contamination is a problem
- Large, slow-speed gears in mixers and mills

Bearing Oil M meets the requirements of the following industry and OEM specifications:

- Morgan Construction Advanced Lubricant Specification, Revision 2.5 (05/2009)
- SMS Siemag SN 180 Part 4 (07/2009)
- U.S. Steel 135, Mill Circulating Oil

Features/Benefits

- Excellent water-separating properties
- Excellent oxidation resistance and thermal stability
- Protects against rust and corrosion
- Good foam resistance

Inhibited “Super Demulsible” Rolling & Steel Mill Circulating Oil





Bearing Oil M

Typical Properties					
Grade	M150	M220	M320	M460	M680
ISO Grade	150	220	320	460	680
Specific Gravity @ 60°F	0.878	0.883	0.887	0.891	0.907
Density, lbs/gal @ 60°F	7.32	7.35	7.39	7.42	7.55
Color, ASTM D1500	2.5	4.0	4.5	4.5	8.0
Flash Point (COC), °C (°F)	265 (509)	275 (527)	285 (545)	293 (559)	279 (534)
Pour Point, °C (°F)	-20 (-4)	-14 (7)	-14 (7)	-6 (21)	-12 (10)
Viscosity					
cSt @ 40°C	150	220	320	460	656
cSt @ 100°C	14.8	19.0	24.7	31.5	35.8
SUS @ 100°F	788	1,163	1,701	2,460	3,557
SUS @ 210°F	78.9	96.8	122	154	175
Viscosity Index	98	97	99	99	88
Acid Number, ASTM D974, mg KOH/g	0.05	0.05	0.05	0.05	0.29
Copper Corrosion, ASTM D130	1a	1a	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	<20	<20	<20	<40	<60
Demulsibility, ASTM D2711					
Free Water @ 52°C, mL	>30	>30	>30	>26	>26
Demulsibility, UEC Dynamic Endurance Test					
Water in Oil after Centrifuging, vol %	<10	<10	<10	<10	<15
Oil in Water after Centrifuging, vol %	<1	<1	<1	<1	<1
Foam Test, ASTM D892, Seq. I, mL	0/0	0/0	0/0	0/0	0/0
Oxidation Stability, RPVOT					
ASTM D2272, minutes	350	350	340	335	245
Rust Test, ASTM D665 A	Pass	Pass	Pass	Pass	Pass

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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