



## XD Bearing Oil

Phillips 66® XD Bearing Oil is a high-performance anti-wear circulating oil specifically developed for use in Morgan Construction No-Twist® rod mills. It provides excellent wear protection and rapid water separation for use in rod and bar mill rolling applications.

XD Bearing Oil is formulated to provide good oxidation resistance, excellent wear protection, protection against rust and corrosion, and resistance to foaming. It has good oxidation resistance and thermal stability at high temperatures to minimize sludge and varnish formation, and provide long service life. It has excellent anti-wear properties to help protect the gears, shafts, bearings and adjusting screws during the extrusion process. It has excellent water-separating properties to minimize the formation of emulsions in circulating systems subject to contamination with large quantities of water. It protects system components against rust and corrosion, and is resistant to excessive foam buildup that can interfere with proper lubrication.

### Applications

- Morgan, Danieli, Demag and Pomini rod and bar mills
- Circulating oil for ferrous and non-ferrous rolling mills
- Circulating systems where water contamination is a problem
- Large, slow-speed gears in mixers and mills
- Hot and cold strip mills

XD Bearing Oil meets the requirements of the following OEM specification:

- Morgan MMC40003 (ISO VG 100)

### Features/Benefits

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

**High-  
Performance  
Circulating Oil  
for Morgan  
High-Speed  
No-Twist® Rod  
Mills**

**KEEPING THE  
WORLD  
RUNNING  
SMOOTHLY.**





**XD Bearing Oil**

Typical Properties				
ISO Grade	100	150	320	460
Specific Gravity @ 60°F	0.876	0.883	0.891	0.894
Density, lbs/gal @ 60°F	7.24	7.35	7.42	7.45
Color, ASTM D1500	0.5	3.0	5.0	5.0
Flash Point (COC), °C (°F)	262 (504)	273 (523)	282 (540)	270 (518)
Pour Point, °C (°F)	-25 (-13)	-19 (-2)	-15 (5)	-12 (10)
Viscosity				
cSt @ 40°C	100	150	320	460
cSt @ 100°C	11.8	14.7	24.3	30.4
SUS @ 100°F	463	695	1,483	2,132
SUS @ 210°F	65.7	76.8	117	144
Viscosity Index	107	96	96	94
Acid Number, ASTM D974, mg KOH/g	0.65	0.65	0.65	0.65
Copper Corrosion, ASTM D130	1b	1b	1b	1b
Demulsibility, ASTM D1401, minutes to pass	5	5	15	20
Demulsibility, ASTM D2711				
Free Water @ 82°C, mL	39.5	35.2	36	36
Emulsion @ 82°C, mL	0.2	0	0	0
Water in Oil @ 82°C, %	0	0.4	0.4	0.4
Foam Test, ASTM D892, Seq. I, mL	0/0	0/0	0/0	0/0
Four-Ball Wear, ASTM D4172				
Scar Diameter, mm	0.36	0.35	0.33	0.33
FZG Scuffing Test, ASTM D5182				
Failure Load Stage	12	12	12	12
Oxidation Stability				
RPVOT, ASTM D2272, minutes	>250	>250	>250	>250
Rust Test, ASTM D665 A	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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