PHILLIPS 66 LUBRICANTS

Rolling Oil

Multipurpose Rolling Oil

Phillips 66® Rolling Oil is a high-quality, multipurpose rolling oil developed for rolling non-ferrous metals, such as aluminum, brass, copper, and copper alloys. It also is recommended for use as a bearing lubricant, hydraulic oil, and roll-coating oil in many mill applications.

Rolling Oil is formulated to provide excellent oxidation resistance, wear protection, protection against rust and corrosion, and resistance to foaming. It has excellent water-separating properties to minimize the formation of emulsions. It is non-staining to aluminum and yellow metals.

Applications

- Hot rolling of non-ferrous metals
- Circulating oil for plain and rolling-element bearings in mill applications
- Hydraulic oil in mill applications
- Roll-coating oil in many mill applications

Rolling Oil meets the requirements of the following industry and OEM specifications:

- U.S. Steel 127, 136
- Vickers (Eaton) I-286-S

Features/Benefits

- Excellent oxidation resistance and thermal stability
- Excellent wear protection for gears and bearings
- Protects against rust and corrosion
- Non-staining to non-ferrous metals
- Excellent water-separating properties
- Good foam resistance

KEEPING THE WORLD RUNNING SMOOTHLY

Rolling Oil

Typical Properties							
ISO Grade	**10**	**15**	**46**	**68**	**150**	**320**	**460**
Specific Gravity @ 60°F	0.857	0.854	0.868	0.873	0.882	0.890	0.892
Density, lbs/gal @ 60°F	7.14	7.11	7.23	7.27	7.34	7.41	7.43
Color, ASTM D1500	0.5	0.5	0.5	0.5	1.5	2.5	6.0
Flash Point (COC), °C (°F)	174 (345)	182 (360)	224 (435)	243 (469)	260 (500)	304 (579)	304 (579)
Pour Point, °C (°F)	-46 (-51)	-43 (-45)	-42 (-44)	-39 (-38)	-32 (-26)	-15 (5)	-15 (5)
Viscosity							
cSt @ 40°C	12.0	16.8	46.0	67.8	149	310	460
cSt @ 100°C	2.9	3.6	6.7	8.6	14.8	23.7	30.1
SUS @ 100°F	69.5	90.5	238	352	782	1,649	2,468
SUS @ 210°F	36.0	38.5	48.7	55.2	78.9	118	148
Viscosity Index	84	92	97	97	98	96	94
Copper Corrosion, ASTM D130	1a	1a	1a	1a	1a	1a	1a
Demulsibility, ASTM D1401, minutes to pass	5	5	10	10	10	10	20
Foam Test, ASTM D892, Seq. I, mL	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Four-Ball Wear, ASTM D4172, Scar Diameter, mm	0.48	0.45	0.42	0.42	0.42	0.42	0.42
FZG Scuffing Test, ASTM D5182, Failure Stage	---	10	>12	>12	>12	>12	>12
Oxidation Stability							
TOST, ASTM D943-04a, hours	12,000	12,000	12,000	12,000	5,000	5,000	5,000
RPVOT, ASTM D2272, minutes	750	750	750	750	600	600	600
Rust Test, ASTM D665 A&B	Pass	Pass	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.

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