



LUBRICANTS

## High Pressure Machine Oil

Phillips 66® High Pressure Machine Oil is a high-quality, anti-wear lubricating oil developed for use in the fabrication of high-strength aluminum and aluminum alloy plates and sheets, such as those used in commercial and military aircraft, the aerospace industry, and in custom industrial applications. It is specially formulated to protect against distortion and provide excellent surface finish.

High Pressure Machine Oil is formulated to provide excellent wear protection and surface finish during aluminum stretching operations. It has excellent anti-wear properties and high load-carrying capacity to protect against distortion. It has excellent oxidation resistance at high temperatures to provide long service life and protect against deposit formation and staining. It has excellent water-separating properties to minimize the formation of emulsions, protects hydraulic system components against rust and corrosion, and is resistant to excessive foam buildup. It also has good low-temperature properties for cold start-ups. It is non-staining to aluminum, bronze, and brass.

High Pressure Machine Oil meets the stringent minimum requirement for load-carrying capacity for hydraulic oils as measured by the Brugger Test.

### Applications

- Fabrication of high-strength aluminum and aluminum alloy plates and sheets
- Rolling and stretching of aluminum
- Chain drives

### Features/Benefits

- High load-carrying capacity to protect against metal distortion
- Excellent surface finish
- Non-staining
- Excellent wear protection
- Protects against rust and corrosion
- Excellent water-separating properties
- Good foam resistance
- Good low-temperature performance

**Anti-Wear  
Machine Oil  
for Fabrication  
of Aluminum  
Products**

KEEPING THE  
WORLD  
RUNNING  
SMOOTHLY. 



## High Pressure Machine Oil

Typical Properties	
<b>ISO Grade</b>	<b>46</b>
Specific Gravity @ 60°F	0.868
Density, lbs/gal @ 60°F	7.23
Color, ASTM D1500	0.5
Flash Point (COC), °C (°F)	215 (419)
Pour Point, °C (°F)	-36 (-33)
Viscosity	
cSt @ 40°C	46.0
cSt @ 100°C	6.9
SUS @ 100°F	214
SUS @ 210°F	48.8
Viscosity Index	105
Acid Number, ASTM D974, mg KOH/g	1.00
Brugger Load-Carrying Capacity, DIN 51347-2, N/mm <sup>2</sup>	30.2
Copper Corrosion, ASTM D130, 48 hrs @ 80°C	1a
Demulsibility, ASTM D1401, minutes to pass	<0
Foam Test, ASTM D892, Seq. I, mL	0/0
Four-Ball Wear Test, ASTM D4172, Scar Diameter, mm	0.52
Oxidation Stability, RPVOT, ASTM D2272, minutes	234
Rust Test, ASTM D665 A&B	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>.

12-07-16

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.

© Phillips 66 Company. Phillips 66® and its respective logos and products are registered trademarks of Phillips 66 Company in the U.S.A. and other countries.