



# 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>

---

## #324 MOLY SPINDLE OIL ISO 10 AND 22

Moly Spindle Oil is premium quality anti-wear oil that is specially formulated for use in the lubrication of high speed spindle bearings in precision grinders and other machine tools that require the use of low viscosity oils.

Moly Spindle Oil is blended from the finest high viscosity index solvent refined severely hydro-treated 100% paraffin oils available. Further blended into these paraffin base oils is a highly specialized multi-functional additive package that provides the Moly Spindle Oil with the following performance advantages:

1. Excellent anti-wear protection.
2. Minimized wear under high load conditions, including those caused by spindle wobble from imbalanced loads.
3. Excellent rust and corrosion protection that extends component life and protects multi-metallurgy components
4. Excellent demulsibility characteristics.
5. Superior hydrolytic stability.
6. Excellent anti-foam and air release properties.
7. Reduced sludge, varnish and deposit formation.
8. Enhanced thermal and oxidative stability.
9. Enhanced compatibility with existing fluids.
10. Excellent fluid quality reserve to maintain its performance features even under severe service conditions and extended drain intervals.
11. Extended bearing and spindle life.
12. Reduced system maintenance.

High speed spindle bearings are generally subjected to shock loads and occasional overloading. These conditions often result in boundary lubrication conditions, which can result in excessive wear.

Though Moly Spindle Oil contains an exceptional anti-wear performance additive package that lasts longer than most conventional anti-wear spindle oils, even this exceptional anti-wear package will disappear over time. To fortify the Moly Spindle Oil's anti-wear capabilities, Micron Moly® is further blended into the product.

Continued on Next Page

TD-324(07/2010)

Micron Moly® is a liquid soluble type of Moly that plates itself to the sliding, rolling and rubbing surfaces of the spindle bearings. This plating action forms a long lasting solid lubricant film on these surfaces that will withstand pressures up to 500,000 pounds per square inch. Once plated to these sliding, rolling and rubbing surfaces, the Micron Moly® not only produces a smooth finished surface, but also reduces friction between the moving parts. This results in less heat being generated, which in turn not only reduces operating temperatures, but less downtime as well.

Moly Spindle Oil can be applied by misting, drop feed, force-feed and wick feed, hand oiling or by the use of circulation systems. Selections of the proper grade of Moly Spindle Oil will result in maximum bearing life. The machine builder's recommendations should always be considered.

Moly Spindle Oil is also recommended for use in certain hydraulic systems requiring the use of an ISO viscosity grade 22 rust and oxidation inhibited anti-wear oil. Moly Spindle Oil ISO 22 also provides excellent performance in airline oilers.

#### TYPICAL PROPERTIES

ISO Grade	10	22
Specific Gravity 60°F/15°C	.8570	.8602
Viscosity, cSt @ 40°C (ASTM D-445)	9.5-11	20.00-23.50
Viscosity, cSt @ 100°C (ASTM D-445)		4.0-4.5
Viscosity Index (ASTM D-2270)	88	98
Flash Point °F./°C (ASTM D-92)	345°/173.88°	400°/204.4°
Fire Point °F./°C (ASTM D-92)	370°/187.78°	440°/228.7°
Rust Protection (ASTM D-665)		
Procedure A	Pass	Pass
Procedure B	Pass	Pass
Four Ball Wear Test (ASTM D-4172) (1hr/40kg/130°F)		
Scar Diameter, mm	0.45	0.45
Copper Strip Corrosion Test (ASTM D-130)	1a	1a

Typical Properties Continued on Next Page

## Typical Properties Continued

ISO Grade	10	22
Foam Test (ASTM D-892)		
Sequence I	0/0	0/0
Sequence II	0/0	0/0
Sequence III	0/0	0/0
Sludge Tendencies (ASTM D-4310)		
Neutralization Number after 1000 hours	0.34	0.34
Insoluble Sludge, Total Copper, mg	39.4	39.4
Total Copper, mg	0.1	0.1
Thermal Stability Test (ASTM D-2070)		
168 hrs./135°C, copper/steel catalyst)		
Sludge (mg/100ml)	1.8	1.8
Condition of Copper Rod	1	1
Copper weight loss, mg/100ml	0.2	0.2
Hydrolytic Stability (ASTM D-2619)		
Copper Wt. Loss mg/cm <sup>2</sup>	0.0556	0.0566
Acidity of Water mg/KOH	0	0
Demulsibility Test (ASTM D-1401)		
O-W-E	40-40-0	40-40-0
Time, min	15	15
Total Acid Number (ASTM D-664)	0.91	0.91

Packaging: 324 Moly Spindle Oil is available in 55-gallon drums, 30-gallon Drums and 5-gallon pails