



# TECHNICAL DATA

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## #274 MOLY EP SYNTHETIC PLUS GREASE

Moly EP Synthetic Plus Grease is a multipurpose, extreme pressure wide temperature range grease that is specially formulated for use in all types of heavy duty automotive, construction, mining, farming and industrial equipment and electric motor applications that are being used under the most adverse conditions of excessive pressure, high shock loading, extreme hot and cold temperatures, and moisture.

Moly EP Plus Grease is compounded from a unique blend of the finest select severely hydrotreated polyalphaolefin (PAO) synthetic base fluids and high viscosity index paraffin base oils available. Blended into these para-synthetic base fluids is an aluminum complex base thickener and selected extreme pressure and rust and oxidation additives. This formulation provides Moly EP Synthetic Plus Grease with the following outstanding performance features.

1. Excellent Low Temperature pumpability characteristics at temperatures as low as -50°F.
2. A wide temperature application range of -45°F to 350°F.
3. Excellent resistance to water washout.
4. Excellent shear and mechanical stability.
5. Excellent antiwear and extreme pressure load carrying properties.
6. Excellent reversibility. This property allows Moly EP Synthetic Plus Grease to have the ability to retain its grease-like consistency and remain in the bearings during periods of heat, high shock loading, extreme pressures, and severe mechanical action.
7. Excellent rust and oxidation inhibiting characteristics.
8. Excellent resistance to oxidation.

Incorporated into this blend of para-synthetic base fluids, aluminum complex thickener and selected additives is Molybdenum Disulfide. The molybdenum disulfide provides Moly EP Synthetic Plus Grease with the ability to act as a "backstop" lubricant when the grease base is either destroyed or wiped away due to unexpected loads, start-up or other conditions which exceed the capabilities of the grease base's fluid film lubrication. This "backstop" is created by the molybdenum disulfide's natural affinity for metal surfaces. This natural affinity for metal surfaces allows the molybdenum disulfide and solid lubricant package to plate itself to these surfaces in order to form a long lasting solid lubricant film. This solid lubricant film will withstand pressures up to 500,000 pounds per square inch, giving the metal surfaces of the bearings the protection they need during periods of high speed, high shock loads and extreme pressure.

The Moly's solid lubricant film also helps to reduce friction. This reduction in friction results in reduced wear and a reduction in contact area temperature. This in turn leads to increased equipment life, less downtime and extended lubrication cycles.

Moly EP Synthetic Plus Grease also has excellent adhesive properties. Because of these excellent adhesive properties, Moly EP Synthetic Plus Grease will not wash out, pound out, splatter or squeeze out under the heaviest load or vibrations.

TYPICAL PROPERTIES ON NEXT PAGE

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Moly EP Synthetic Plus Grease #00 is pumpable to -45°F, #0 is pumpable to -40°F, #1 grade is pumpable to -30°F and #2 grade is pumpable to -20°F.

Moly EP Synthetic Plus meets and exceeds the following specifications and manufacturer's requirements: US Steel 346, 352, 355, 370 371 specifications, Caterpillar MPGM, Caterpillar's 3% Moly Specification, Komatsu, MIL-G-234C, Case-IH 251H, John Deere, New Holland, Ford M1693A, General Motors, Chrysler, P&H 472B, 472C and 472D, Federal Specification VV-G-632A, MIL-G-4343C, MIL-G-10924G, MIL-G-23515, MIL-G-7722, MIL-DTL-23544D DOD-G-24508A(Navy), JIS K2220, DIN 515825, SKF, Fag, INA, Torrington, Timken, Rexnord Link-Belt Bearing Division, NSK, Koyo, NTN Bearing, and Roller Bearing Company of America .

### Typical Properties

	00	0	1	2
NLGI Grade	00	0	1	2
Type Thickener	Aluminum Complex	Aluminum Complex	Aluminum Complex	Aluminum Complex
Dropping Point °F/°C (ASTM D-2265)	500°/260°	500°/260°	500°/260°	500°/260°
Worked Penetration, 60 strokes 77°F/25°C (ASTM D-217)	400-430	355-385	310-340	280-295
Roll Stability Test (ASTM D-1831) % Consistency Change	---	---	10	7.1
Rust Inhibition Test (ASTM D-1743) Rating	1,1,1	1,1,1	1,1,1	1,1,1
Oxidation Stability (ASTM D-942) Psi Loss at 100 hr.	1.5	1.5	2	2
Water Washout Test (ASTM D-1264) % Loss 175°F/79°C	---	---	5.4	5.4
Pressure Oil Separation Test, US Steel Method Grams of Oil separation	---	---	2	1.8
Timken EP Test (ASTM D-2596) Fail Load, lbs.	55	60	60	60
Four Ball EP Test (ASTM D-2596) Load Wear Index (kg)	36.8	36.8	41.8	45.1
Weld Point (kg)	315	315	315	315
Four Ball Wear Test (ASTM D-2266) Scar Diameter	.7 mm	.68 mm	.6 mm	.6 mm
Falex Continuous Load (ASTM D-3233) Failure, lbs.	1000	1000	1500	1750
Wheel Bearing Leakage Tendency Test (ASTM D-1263) Leakage, grams*	---	---	1	.6
Deposits*	---	---	No deposits	No deposits
Oil Separation (ASTM D-1742) % Wt. of Oil Separation*	---	---	2.5	2
Evaporation Loss (ASTM D-2595) % Loss 22 hr. @ 250°F	0.5	0.5	0.25	0.25
Grease Mobility (US Steel Method) °F (Flow rate in grams 75 sec.)	---	---	.24	.14
Lincoln Ventmeters Psi @ 100°F	---	---	175	400
Psi @ 30°F	---	250	275	650
Psi @ 0° F	250	350	450	1175
Psi @ -10°F	---	---	---	1450
Psi @ -20°F	500	600	925	---
Psi @ -30°F	---	---	---	1800
Psi @ -40°F	1000	1200	1200	---
<b>BASE OIL PROPERTIES</b>				
Viscosity SUS 100°F (ASTM D-445)	257.3-334	293.4	528.4	800
Viscosity cSt 40°C (ASTM D-445)	50.00-65.00	56.97	101.52	152.17
Viscosity cSt 100°C (ASTM D-445)	7.5-9.5	8.23	11.75	14.83
Viscosity Index (ASTM D-2270)	114	114	104	105
Flash Point °F/°C (ASTM D-92)	471°/244°	471°/244°	493°/256°	530°/276.7°
Fire Point °F/°C (ASTM D-92)	510°/265.56°	510°/265.56°	530°/276.7°	560°/293.3°

These tests are applicable to only NLGI grades #1, #2, #3 and #4 greases.

Packaging: #274 Moly EP Synthetic Plus Grease is available in (net weights) 420 lb. drums, 120 lb. kegs, 40 lb. pails and cases of 30 tubes.