



TECHNICAL DATA

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#238 MOLY SUPREME

Moly Supreme is a multi-purpose, tacky, synthetic blend extreme pressure anti-wear grease that is especially formulated for use in all types of heavy duty automotive, construction, mining, farming and industrial equipment that are being used under adverse conditions of excessive pressure, high shock loading, extreme hot and cold temperatures and moisture.

Moly Supreme is compounded from the finest select high viscosity index solvent refined severely hydro-finished 100% paraffin base stocks and polyalphaolefin (PAO) synthetic base fluids available. Blended into these high viscosity index paraffin base stocks and PAO synthetic base fluid is an aluminum complex base thickener. This aluminum complex thickener allows the Moly Supreme to exhibit excellent flow and film forming characteristics. This aluminum complex thickener allows the Moly Supreme to exhibit the following performance features.

1. Excellent pumpability characteristics for use in centralized lube systems.
2. Excellent resistance to water washout and water spray-off.
3. Excellent shear and mechanical stability.
4. Excellent anti-wear and extreme pressure load carrying properties.
5. 100% reversibility. This property allows Moly Supreme to have the ability to retain its grease-like consistency and remain in the bearings during periods of heat, high shock loading, extreme pressure, and severe mechanical action.
6. Excellent rust and oxidation inhibiting characteristics.
7. Excellent resistance to oxidation.
8. A high dropping point.
9. Low temperature pumpability characteristics.

Further blended into the high viscosity index 100% paraffin base stocks, PAO synthetic base fluids and the aluminum complex thickener is molybdenum disulfide and a solid lubricant package. The molybdenum disulfide and solid lubricant package allows the Moly Supreme 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 can exceed the capabilities of the grease base's fluid film lubrication. This "backstop" is created by the molybdenum disulfide's and solid lubricant package'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, less downtime and extended lubrication cycles.

Continued on Next Page

TD-238 (Rev. 09/04)

Moly Supreme has excellent rust and oxidation inhibiting characteristics, excellent water resistance, shear and mechanical stability, and good pumpability properties. Moly Supreme also has superior cohesive and adhesive properties. Because of these cohesive and adhesive properties, Moly Supreme will not wash out, pound out, splatter or squeeze out even under the heaviest loads or vibrations. Due to its superior cohesive and adhesive properties Moly Supreme is not recommended for use in passenger car automotive wheel bearing applications.

Moly Supreme meets and exceeds the following specifications and manufacturer's requirements: US Steel 346, 352, 355, 370 371 specifications, Caterpillar MPGM, Caterpillar's 5% Molybdenum Disulfide Requirement for pin and bushing applications, 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-23549C, DOD-G-24508A(Navy), JIS K2220, DIN 515825, SKF, Fag, INA, Torrington, Timken, Rexnord Link-Belt Bearing Division, Koyo, NTN Bearing, and Roller Bearing Company of America .

Moly Supreme can be applied either manually or by a heavy -duty automatic lube system. Moly Ultra Supreme has an operating temperature of -30°F to 350°F. Moly Supreme #1 has an operating temperature of -10°F to 350°F. Moly Supreme #2 has an operating temperature of 0°F to 350°F. Moly Supreme #3 has an operating temperature of 30°F to 350°F.

TYPICAL PROPERTIES

NLGI Grade	#0	#1	#2	#3
Worked Penetration 77°F/25°C (ASTM D-217)	370-385	310-340	280-295	220-250
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°
Roll Stability Test (ASTM D-1831)				
% Loss Consistency	-----	7	10.2	9.19
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 hours	1	1	1	1
Timken EP Test (ASTM D-2509)	60 lb.	65 lb.	65 lb.	65 lb.
Four Ball EP Test (ASTM D-2596)				
Load Wear Index (kg)	55.2	47.82	48.94	51.34
Weld Point (kg)	315	400	400	400
Four Ball EP Test (ASTM D-2266)				
Scar Diameter, mm	0.6	.63	.63	.63
Falex Continuous Load (ASTM D 3233)				
Failure lbs.	3200	3500	3500	3500
Water Washout Test (ASTM D-1264)				
% Loss 175°F/79°C	-----	6%	5.5%	5.5%
Lincoln Ventmeter				
Psi @ 100°F	-----	175	550	550
Psi @ 30°F	-----	275	1200	1200
Psi @ 0°F	-----	1200	1200	1300
Psi @ -10°F	-----	1800	-----	-----

Typical Properties Continued

NLGI Grade	#0	#1	#2	#3
Oil Separation (ASTM D-1742*)				
% wt. of Oil Separation Loss	-----	1	1	1
Evaporation Loss (ASTM D-2595)				
% Loss 22 hrs @ 250°	0.4	0.4	0.3	0.25
NLGI Grade	#0	#1	#2	#3
<u>Base Oil Properties</u>				
Viscosity SUS 100°F (ASTM D-445)	1167.5-1221.7	1198.2	1198.2	1800
Viscosity cSt 40°C (ASTM D-445)	220-250	226.17	226.17	337.94
Viscosity cSt 100°C (ASTM D-445)	18.75-19.3	18.89	18.89	25.25
Viscosity Index (ASTM D-2270)	95	95	95	105
Flash Point °F/°C (ASTM D-92)	485°/251.56°	518°/270°	518°/270°	540°/282.2°
Fire Point °F/°C (ASTM D-92)	515°/262.33°	550°/287.78°	550°/287.78°	560°/293.3°

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

Packaging: #238 Moly Supreme #1, #2 and #3 is available in (net weights) 420 lb. drums, 120 lb. kegs, 40 lb. pails, 4-7 lb/cs and 30 tubes (per case).