



TECHNICAL DATA

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#238 ULTRA SUPREME

Ultra Supreme is a multi-purpose, tacky, para-synthetic, extreme pressure anti-wear aluminum complex base grease that is especially formulated for use in all types of heavy duty automotive, construction, mining, farming and industrial equipment, pin and bushing and fifth wheel applications that are being used under adverse conditions of excessive pressure, high shock loading, extreme hot and cold temperatures and moisture.

Ultra Supreme is compounded from the finest select severely hydrotreated polyalphaolefin (PAO) synthetic base fluids and high viscosity index solvent refined severely hydro-finished 100% paraffin base stocks available. Blended into these para-synthetic base fluids is an aluminum complex base thickener and carefully selected extreme pressure, antiwear and rust and oxidation additives. This formulation not only allows the Ultra Supreme to exhibit excellent flow and film forming characteristics but also 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 Ultra 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.
10. Excellent resistance to bleeding.

Further blended into the para-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 Ultra 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.

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Ultra Supreme has excellent rust and oxidation inhibiting characteristics, excellent water resistance, shear and mechanical stability, and good pumpability properties. Ultra Supreme also has superior cohesive and adhesive properties. Because of these cohesive and adhesive properties, Ultra 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 Ultra Supreme is not recommended for use in passenger car automotive wheel bearing and electric motor bearing.

Ultra 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 .

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

TYPICAL PROPERTIES ON NEXT PAGE

Typical Properties

NLGI Grade	#1	#2	#3
Worked Penetration 77°F/25°C (ASTM D-217)	310-340	280-295	220-250
Type Thickener	Aluminum Complex	Aluminum Complex	Aluminum Complex
Dropping Point °F/°C (ASTM D-2265)	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
Oxidation Stability (ASTM D-942)			
PSI loss at 100 hours	1	1	1
Timken EP Test (ASTM D-2509)	65 lb.	65 lb.	65 lb.
Four Ball EP Test (ASTM D-2596)			
Load Wear Index (kg)	47.82	48.94	51.34
Weld Point (kg)	400	400	400
Four Ball EP Test (ASTM D-2266)			
Scar Diameter, mm	.63	.63	.63
Falex Continuous Load (ASTM D 3233)			
Failure lbs.	3500	3500	3500
Water Washout Test (ASTM D-1264)			
% Loss 175°F/79°C	6%	5.5%	5.5%
Oil Separation (ASTM D-1742*)			
% wt. of Oil Separation Loss	1	1	1
Evaporation Loss (ASTM D-2595)			
% Loss 22 hrs @ 250°	0.4	0.3	0.25

Base Oil Properties

Viscosity SUS 100°F (ASTM D-445)	1198.2	1198.2	1800
Viscosity cSt 40°C (ASTM D-445)	226.17	226.17	337.94
Viscosity cSt 100°C (ASTM D-445)	18.89	18.89	25.25
Viscosity Index (ASTM D-2270)	95	95	105
Flash Point °F/°C (ASTM D-92)	518°/270°	518°/270°	540°/282.2°
Fire Point °F/°C (ASTM D-92)	550°/287.78°	550°/287.78°	560°/293.3°