Product Data

Castrol Molub-Alloy™ GM 1500

Gear oil

Description

Castrol Molub-Alloy™ GM 1500 gear oil (previously called Molub-Alloy™ 1500) is a severe duty, Extreme Pressure (EP) gear oil designed to meet the increasing lubrication needs and specifications of manufacturers of modern industrial and mining equipment such as walking draglines. To withstand the surging pressures and sudden reversal in speed and direction of hoist and drag gears and the great torque experienced in swing and propel gears, the ultimate in oil film forming and persistence is required.

Molub-Alloy GM 1500 is a blend of high quality, petroleum base stocks and additives designed for very heavy duty and severe service. Viscosity is in the ISO viscosity grade 1500.

High viscosity is achieved naturally by a blend of select petroleum base stocks and not by the addition of viscosity modifiers which could shear to a lower viscosity in service. High film strength is assured by temperature stability and by the tendency for **Molub-Alloy** lubricating solids in stable suspension to prevent high temperatures from occurring under extreme pressures during boundary (contact) lubrication.

Extreme Pressure (EP) characteristics are derived from chemical EP additives combined with a blend of **Molub-Alloy** lubricating solids in very stable suspension. **Molub-Alloy GM 1500** is non-corrosive to all ferrous and non-ferrous metals. The lubricating solids are selected specifically for heavy duty gear service.

Rust and oxidation inhibiting characteristics are maximized for rust protection and long life of the oil. Foaming is controlled by the use of special components and inhibitors.

Application

Molub-Alloy GM 1500 is designed for service in enclosed gear systems in heavy duty industrial and mining equipment including walking draglines, shovels, and other large excavators. Gear types include helical, bevel, spiral bevel, and others subject to extreme pressures and severe shock loads.

Molub-Alloy GM 1500 has also found use in replacing grease in applications where the lubricant must dwell for extended periods in small lube lines and channels in high ambient temperatures. Such applications are found in tire curing presses, and near casting moulds, ovens, and autoclaves where the possibility of grease separating and "cooking" is high.

Molub-Alloy Gear Oil GM 1500 may be used in central oil or circulation systems or applied by automatic dispensing equipment.

Advantages

- Formation of a stable lubricant film on tooth flanks over a wide temperature range even at lower speed due to good viscosity/temperature characteristics.
- Boundary (contact) lubrication with **Molub-Alloy** lubricating solids occurs when the oil film is squeezed thin during extreme and shock loading, and at start-up or other conditions which exceed the capabilities of fluid film lubrication. Contact lubrication protects working surfaces against spilling, and minimizes wear caused by cold welding.
- Where lubricating solids protect gear surfaces from contact friction, they minimize the frictional heat which could reduce oil film strength by lowering its viscosity.
- Improved surfaces and reduced heat of friction may substantially increase the working life of both parts and lubrication oil.
- Overall savings are derived from the above and result from less labour and downtime, smoother, more efficient operation with longer parts life, and extended lubrication cycle.

Typical Characteristics

Name	Method	Units	GM 1500
ISO Viscosity Grade	ASTM D2422	-	1500
AGMA Lubricant number	-	-	Between 9EP and 10EP
Specific gravity @ 60°F	ASTM D 1298	g/cm^3	0.925
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm^2/s	1500
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm^2/s	64
Viscosity Index	ISO 2909 / ASTM D2270	-	95
Flash Point, COC	ISO 2592 / ASTM D92	°C/°F	227/441
Pour Point	ISO 3016 / ASTM D97	°C/°F	-6/ 21.2
Rust test - Procedure A (24 hrs Distilled Water)	ISO 7120 / ASTM D665A	-	Pass
Rust test - Procedure B (24 hrs Synthetic Sea Water)	ISO 7120 / ASTM D665B	-	Pass
Copper corrosion (3hrs @ 100°C/212°F)	ISO 2160 / ASTM D130	Rating	1b
FZG Gear Scuffing test - A/8.3/90	DIN 51354	Failure Load stage	>12
Timken Extreme Pressure Test, OK Load	ASTM D2782	Kg/lbs	36/80
Four Ball Wear test - Scar Diameter (40 kg, 75°C/167°F, 1800 rpm, 1 hr)	ASTM D2266	mm	0.45
Four Ball Weld Load test - Load Wear Index	ASTM D2783	Kg	65
Four Ball Weld Load test - Weld Load	ASTM D2783	Kg	500
Four Ball Wear test - Wear Scar Diameter (300N / 1 hr)	DIN 51350-03-B	mm	<0.40
Falex Pin & Vee Block test - Antiwear properties	ASTM D 2670-10	Teeth Wear (number)	2
Falex Pin & Vee Block test - Extreme Pressure properties	ASTM D 3233-03B	Fail Load (lbs)	2750

Subject to usual manufacturing tolerances.

Additional Information

Do not use with diatomaceous earth or any other adsorbent surface active filter media.
Other types of filters require only recommended inspection and service.
This product was previously called Molub-Alloy™ 1500. The name was changed in 2015.

BP Lubricants USA Inc., 1500 Valley Road, Wayne, NJ 07470
Telephone: +1-888-CASTROL Product Information: +1-877-641-1600
www.castrol.com/en_us/b2b/home.html