



Molub-Alloy GM™ 969/320

Leak Resistant Gear Compound

Description

Castrol Molub-Alloy™ GM 969/320 (previously called Molub-Alloy 969/320) Leak Resistant Gear Compound is specially formulated to help control leaks in gear cases when repairs cannot be immediately performed to eliminate the cause(s) of leakage. The synthetic thickener forms a mat-like matrix at the points of leakage to minimize the flow of oil. This product has a moderate thickening effect on the product, especially during storage or while the equipment is stationary. During the churning motion of gears and bearings, however, Molub-Alloy GM 969/320 exhibits the rapid flow and film-forming characteristics similar to a regular gear oil.

Leakage from gear cases has traditionally been controlled by the substitution of a grease for the lubricating oil. This is unsatisfactory because greases can form "channels" and are poor at carrying heat away from the meshing gears and dissipating it from the gear case. In contrast, the synthetic thickener in Molub-Alloy GM 969/320 forms a gel and seals small openings in the gear case but otherwise acts like a standard gear oil in service.

Application

Molub-Alloy GM 969 Leak Resistant Gear Compound is formulated using a standard ISO base oil viscosity.

Molub-Alloy GM 969 Leak Resistant Gear Compound was originally developed for service in heavy duty earth-moving equipment such as shovels and draglines. Surging stress and vibration on these machines inevitably produces some degree of leakage from gear cases. Excessive leakage at shaft seals is not uncommon on hoist, drag, propel and especially swing gear cases of large draglines and swing cases of shovels. Often the tramp oil will contaminate the heavy gear compounds necessary to lubricate the exposed open gear drives.

The use of Molub-Alloy GM 969 Leak Resistant Gear Compound can be extended to control leaks in gearsets in industrial and marine applications.

Advantages

- Performs as a heavy duty gear oil under normal operations.
- Will reduce or completely stop leakages until maintenance can be carried out.

Typical Characteristics

Name	Test Method	Units	Molub-Alloy GM 969/320
Consistency	-	-	Semi-Fluid
Appearance	Visual	-	Fibrous
Specific Gravity @ 60°C / 140°F	ASTM D1298 / ISO 3675	-	0.9
Brookfield Viscosity	ASTM D2983 / ISO 9262	cP	18,750
Flash Point - open cup method	ASTM D92 / ISO 2592	°C/°F	229 / 445
Four Ball Wear Test, Scar Diameter (40kg, 75°C/ 167°F, 1800rpm, 1hr)	ASTM D2783	mm	0.45
Four Ball Weld Load test - Load Wear Index	ASTM D2783	kgf	48
Four Ball Weld Load test - Weld Point	ASTM D2783	kgf	400
Antiwear test - Falex Pin & V-Block	ASTM D2670	Teeth Wear (number)	3
Copper corrosion (3 hrs@100°C/212°F)	ASTM D130 / ISO 2160	Rating	1b
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	12+
FZG Gear Scuffing test - A/16.6/90	ISO 14635-1	Failure Load Stage	12+
Timken OK Load test	ASTM D2782	kg / lb	32 / 70
Foaming Tendency	Tribol Test	-	No foaming
BASE OIL PROPERTIES:-			
ISO Viscosity Grade	-	-	320
AGMA Lubricant Number	-	-	6EP
Kinematic Viscosity @ 100°C / 212°F	ASTM D445 / ISO 3014	mm ² /s	25
SAE Grade (Gear Oil)	-	-	140
Viscosity Index	ASTM D2270 / ISO 2909	-	100
Pour Point	ASTM D97 / ISO 3016	°C/°F	-15 / +5

Subject to usual manufacturing tolerances.

Additional Information

Important Restrictions

Molub-Alloy GM 969 Leak Resistant Gear Compounds are not for use in units that include a central lubricating system as they will not pump like an oil or nor flow through small lines. 969 will plug filters.

Molub-Alloy GM 969 Leak Resistant Gear Compounds should not be used in gearcases where shaft bearings are lubricated by oil flowing through small lines or orifices as they will seal small openings or seriously restrict oil flow. On the other hand, where bearings are submerged, and oil flow is not unidirectional, flow is not restricted.

Molub-Alloy GM 969 Leak Resistant Gear Compounds are designed for use in gearboxes where gear oil makeup volumes are unacceptable due to worn shaft seals or other minor causes of leakage. The 969 Compounds should be used as gearbox fill only until repair of the leaking condition can be conveniently performed. Castrol Molub-Alloy GM 969 Leak Resistant Gear Compounds are not designed to prevent leakage due to gross mechanical defects such as worn bearings and damage causing shafts to experience excessive play which results in excessive lubricant makeup.

Notes

Molub-Alloy GM 969 Leak Resistant Gear Compounds may be metered through grease pumping systems, but would be expected to cavitate in oil circulating pumps.

Molub-Alloy GM 969 Leak Resistant Gear Compounds will flow readily when agitated but should not be expected to flow by gravity or feed through small lines. Molub-Alloy GM 969 Leak Resistant Gear Compounds must be stirred vigorously before use.

Since filters must be removed when using Castrol Molub-Alloy GM 969 Leak Resistant Gear Compounds, routine oil sampling is strongly recommended.

This product was previously called Molub-Alloy 969/320. The name was changed in 2015.

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