



Molub-Alloy 936 SF Heavy Spray

Open Gear Compounds (Solvent Free)

Description

Castrol Molub-Alloy™ 936 SF Heavy Spray is a uniquely compounded open gear lubricant developed specifically for use on heavy duty equipment in mining and industrial service. Molub-Alloy 936 SF Heavy is compounded to give maximum protection to gears and slides on large draglines and shovels while minimizing potential pollutants to the environment. Molub-Alloy 936 SF Heavy Spray is designed to meet and is in compliance with the Bucyrus International SD 4713 specification for Open Gear Lubricants.

Molub-Alloy 936 SF Heavy Spray is part of Tribol's Eco-Solutions™ product offering. Formulated to address environmental concerns, Castrol Molub-Alloy 936 SF Spray is free of lead, antimony, barium, and chlorinated solvents. No solvents of any kind are used in 936 SF Heavy Spray.

The structural integrity and strength of the lubricating film is particularly valuable in the critical process of seating new gears because of the natural occurrence of high spots (asperities) in newly machined surfaces. The lubricating film must separate the mating surfaces sufficiently to cushion the effect of the impact of asperities, and thus minimize initial pitting which could lead to progressive and destructive pitting later.

A highly refined, viscous, paraffinic petroleum derivative is the foundation of a blended base fluid with excellent natural chemical and thermal stability. Molub-Alloy 936 SF Heavy Spray is compounded to flow readily in the film-forming process; yet it resists "squeeze-out" and clings tenaciously even to gear teeth in vertical orientation.

A proprietary blend of Castrol Molub-Alloy lubricating solids is included to promote antiwear and load carrying properties beyond those of conventional lubricants. The select lubricating solids work synergistically with chemical antiwear and extreme pressure (EP) additives to reduce contact temperatures while providing excellent antiweld protection under extreme pressure and shock loading.

Rust and oxidation inhibitors are included in the formulation to protect the equipment and the lubricating film against the elements in severe climate.

Application

Mining applications include all types of open gears, rails and rollers, racks and pinions, dipper sticks and other slides on shovels and draglines.

Molub-Alloy 936 SF Heavy Spray may be applied either manually or by heavy duty automatic systems.

Advantages

- Compounded for the protection of the ecology - the elimination of materials considered to be hazardous.
- Forms tough durable film with "cushioning" effect, even under extreme pressures and at very slow speeds; film resists erosion from rain or sleet, and resists peeling in dusty environments.
- Resists film destruction by contaminating oils and greases migrating from nearby mechanisms.

Typical Characteristics

Name	Method	Units	Molub-Alloy 936 SF Heavy Spray
Specific Gravity @ 25°C / 77°F	ISO 3675 / ASTM D1298	-	1.002
Density of finished grease @ 15°C / 59°F	In-house test	lb/gallon	8.35
Consistency	ISO 2137 / ASTM D217	NLGI Grade	0
Worked Penetration (60 strokes @ 25°C / 77°F)	ISO 2137 / ASTM D217	0.1 mm	345-360
Brookfield Viscosity	ISO 9262 / ASTM D2983	cP	144,000
Base Oil Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm ² /s	2030
Base Oil Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm ² /s	57
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	158/316
Four Ball Weld Load test - Load Wear Index (27°C / 1770 rpm)	ISO 11008 / ASTM D2596	-	130
Four Ball Weld Load test - Weld Point	ISO 11008 / ASTM D2596	kgf	800
Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr)	ISO 51350 / ASTM D2266	mm	0.7
Rust Test (distilled water)	ASTM D1743	Pass	Pass
Copper Corrosion (24 hrs, 100°C / 212°F)	ASTM D4048	Rating	1b
Grease Pumpability test - Lincoln Ventmeter	US Steel test method	psi	500
Lubricating solids, particle size	-	microns	nominal 15, maximum 45

Additional Information

Molub-Alloy 936 SF Heavy Spray was not intended for general use in bushings and bearings except in slow moving heavily loaded applications. Contact Castrol Engineering for all new applications of 936 SF in bearings.

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