

## Molub-Alloy 1000

Extreme temperature grease

### Description

Castrol Molub-Alloy™ 1000 extreme temperature grease utilises synthetic base oils in conjunction with a blend of Molub-Alloy lubricating solids selected for high temperature service. The synthetic fluids in Molub-Alloy 1000 were selected for their controlled low volatility, minimum residue after evaporation and high VI for additional film strength at elevated temperatures. The combination of synthetic fluids and a unique thickening system offers physical stability in prolonged service at high temperatures. Molub-Alloy 1000 remains more pliable than conventional high temperature greases. As a result of the higher viscosity synthetic base fluids used in Molub-Alloy 1000, the film strength at elevated temperature is superior to that of petroleum base oils. It is also formulated with a combination of rust and oxidation inhibitors for prolonged service life without relubrication.

### Application

Molub-Alloy 1000 is designed for use in applications where elevated temperatures are encountered, heavy and shock loading occurs, and where bearing speeds are low to moderate. Molub-Alloy 1000 has been successfully used in a wide range of elevated temperatures industrial applications such as:

- In overhead sealed trolley wheel conveyor bearings passing through paint drying ovens in an air conditioner manufacturing plant. Temperatures reached 180°C/356°F and relubrication cycles were every 8 months.
- In overhead sealed trolley wheel conveyor bearings passing through a paint drying oven in an automotive assembly plant. Temperatures reached 185°C/365°F with relubrication cycles every 6 months.
- In floor conveyor bearings passing through paint drying ovens in an automotive assembly plant. Temperatures of 190°C/374°F were reached with relubrication cycles every 6 months.
- In overhead sealed trolley wheel conveyor bearings passing through paint drying ovens of a motorcycle assembly plant. After 4 months without relubrication in temperatures of 180°C/356°F, the bead of product on the outside of the trolley wheels was still soft and pliable. Relubrication cycles were every 6 months.
- In a cement rotary kiln as a gas-seal lubricant to minimise hot gas leakage.

### Advantages

- Excellent friction reduction characteristics due to Molub-Alloy solid lubricants – easier start-up, reduced heat, and reduced energy leading to longer bearing life.
- Synthetic base fluid and unique thickening system – the combination of synthetic fluids and a unique thickening system offers physical stability in prolonged service at high temperatures. This combination makes Molub-Alloy 1000 more pliable than conventional high temperature greases, leading to longer bearing life, extended lubrication cycles and uninterrupted service.
- Molub-Alloy 1000 grease is engineered for prolonged service from 177°C/350°F to 288°C/550°F. Molub-Alloy 1000 also withstands intermittent exposure to temperatures up to 343°C/650°F
- Formulated to address environmental concerns – it is free of antimony, barium, lead, and zinc.

### Typical Characteristics

Name	Method	Units	1000
Appearance	Visual	-	Dark grey
Thickener type	-	-	Organic Sodium
Base oil	-	-	PAO-ester
Consistency	ISO 2137 / ASTM D217	NLGI Grade	1
Density @ 20°C / 68°F	ASTM D4052	kg/m <sup>3</sup>	939
Worked Penetration (60 strokes @ 25°C / 77°F)	ISO 2137 / ASTM D217	0.1 mm	310-340
Worked Penetration (100,000 strokes @ 25°C / 77°F) - change from 60 strokes	ISO 2137 / ASTM D217	0.1 mm	20
Dropping Point	ISO 2176 / ASTM D566	°C/°F	260+/500+
Base Oil Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	540
Base Oil Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	50
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	210/410
Rust Test - EMCOR (distilled water)	ISO 11007 / ASTM D6138	Rating	0/0
Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr)?	ISO 51350 / ASTM D2266	mm	0.42
Four Ball Weld Load test - Weld Point	ISO 11008 / ASTM D2596	kgf	250
Four Ball Wear test - Weld Load	DIN 51350-4A	N	2,500
Water Wash-out @ 79°C	ISO 11009 / ASTM D1264	%wt loss	4
Oxidation Stability - Rotating Pressure Vessel test	ASM D942	pressure drop psi	4
Oil Separation (24 hrs, 0.25 psi, 25°C / 77°F)	ASTM D1742	%wt	0
Oil Separation (30 hrs @ 100°C / 212°F)	ASTM D6184	%wt	8.9
Evaporation Loss (22hrs @ 100°C / 212°F)	ASTM D2595	%wt	0.3
ISO Classification	ISO 6743/9	-	L-XDGF8

Subject to usual manufacturing tolerances.

## Additional Information

Molub-Alloy 1000 should not be mixed with other greases or oils. In case of doubt please consult your local Technical Services. Although approximate temperatures and relubrication cycles are denoted previously, these should be used only as general guidelines due to variation from application to application

## Storage

Molub  
20 Feb 2015

Castrol Greases should be stored under cover. Where outside storage is unavoidable drums should be laid horizontally to avoid the possible ingress of water and damage to drum markings. Products should not be stored above 60°C, exposed to hot sun or freezing conditions.

This data sheet and the information it contains is believed to be accurate as of the date of printing. However, no warranty or representation, express or implied, is made as to its accuracy or completeness. The data provided is based on standard tests under laboratory conditions and is given as a guide only. Users are advised to ensure that they refer to the latest version of this data sheet. It is the responsibility of the user to evaluate and use products safely, to assess suitability for the intended application and to comply with all applicable laws and regulations. Material Safety Data Sheets are available for all our products and should be consulted for appropriate information regarding storage, safe handling, and disposal of the product. No responsibility is taken by either BP plc or its subsidiaries for any damage or injury resulting from abnormal use of the material, from any failure to adhere to recommendations, or from hazards inherent in the nature of the material. All products, services and information supplied are provided under our standard conditions of sale. You should consult our local representative if you require any further information.

10 Junction Avenue, Parktown, Johannesburg, 2193, South Africa  
+27 11 488 5111, 0860 222 166 (SA), 0800 111 551 (SA)  
www.castrol.co.za