



## Product Data

# Castrol Molub-Alloy 777 ES

High-performance grease

## Description

Castrol Molub-Alloy™ 777 ES greases are designed for very heavy-duty service in adverse environments. They are blended and compounded to withstand the heavy- and shock-loading commonly found in the steel/primary metals, construction, mining and forest products industries.

Molub-Alloy 777 ES greases are made using a blend of high-quality petroleum oils, polymers and a proprietary blend of Molub-Alloy lubricating solids. These lubricating solids work synergistically with chemical anti-wear and extreme pressure (EP) additives to help reduce contact temperatures and wear while providing the ultimate in extreme pressure and shock load anti-weld protection. This blend—together with a shear stable thickening system—provides a uniquely effective seal against loss of grease or contamination from the atmosphere, even where mechanical seals may be damaged. Rust and oxidation inhibiting characteristics are maximized to afford effective rust protection and long life of the grease.

## Application

Molub-Alloy 777 ES are multi-purpose greases that operate effectively in plain/journal and anti-friction bearings. They exhibit excellent adhesive and cohesive characteristics and are highly resistant to mechanical shearing.

Typical applications include ball and roller bearings, bushings, slides, screws, and general lubrication where loads may be heavy and speeds low.

Industries most commonly requiring the heavy-duty, all-weather capabilities of Molub-Alloy 777 ES greases include steel, mining, logging, chemical, and construction.

Molub-Alloy 777 ES 1 and 2 are Bucyrus-certified greases (with lubricating solids <5% by weight and <10 µm max particle size).

## Advantages

- Excellent friction reduction characteristics due to Molub-Alloy solid lubricants – easier start-up, reduced heat, and reduced energy, leading to longer bearing life.
- Excellent mechanical stability – grease keeps its consistency in-service, ensuring long term protection.
- Easily pumpable in central lubrication systems.
- Superior adhesion – continuous lubrication and reduced consumption as the film stays between lubricated surfaces.
- Exceptional water resistance – coating film stays on the surface even in the presence of water.
- Resistant to copper and steel corrosion – extends bearing life and performance.
- Excellent EP and anti-wear properties – protects equipment against extreme/shock loading and helps minimize bearing components wear and hence extends equipment life.
- Compounded – optimum protection and long life to seals, as well as forming a protective barrier in damaged seals.

## Typical Characteristics

Test	Method	Units	777-1 ES	777-2 ES
Appearance, Visual	-	-	Dark grey	Dark grey
Thickener Type	-	-	Lithium	Lithium
Base Oil Type	-	-	Mineral oil	Mineral oil
NLGI Grade	-	-	1	2
Density @ 20°C/68°F	ASTM D 1475	g/ml	0.881	0.883
Worked Penetration, 60 Strokes @ 25°C/77°F	ISO 2137 ASTM D217	0.1 mm	310-340	265-295
Worked Penetration, 100,000 Strokes @ 25°C/77°F, change from 60 Strokes	ISO 2137 ASTM D217	0.1 mm	+ 20	+ 22
Dropping Point	ISO 2176 ASTM D2265	°C/°F	180+ / 356+	180+ / 356+
Base Oil Viscosity @ 40°C/104°F @ 100°C/212°F	ISO 3104 ASTM D 445	mm <sup>2</sup> /s	950 85.5	950 85.5
Base Oil Flash Point	ISO 2592 ASTM D92	°C/°F	230/417	230/417
Rust Test, 48 hrs @ 52°C/126°F	ASTM D1743	Rating	Pass	Pass
Corrosion Protection (SKF Emcor)	ISO 11007 ASTM D 6138	Rating	0/0	0/0
Copper Corrosion, 24 hrs, 100°C/212°F	ISO 2160 ASTM D4048	Rating	1b	1b
Four Ball EP Test Load Wear Index Weld Load	ASTM D2596	kg	100+ 620	100+ 620
Four Ball Wear Test (1 hr, 40 kg, 1200 rpm, 75°C/167°F), Scar Diameter	ASTM D2266	mm	0.45	0.55
Four Ball Wear, (1000 N, 1 min) Scar Diameter	DIN 51350-5E	mm	0.9	0.9
Timken EP Test, OK Load	ASTM D2509 IP 326	kgs/lbs	23/50	23/50
Water Washout @ 38°C/100°F @ 79°C/175°F	ASTM D 1264	% loss	3.8 5.4	1.6 3.2
Water Resistance, 90°C/194°F, 3h	DIN 51807-1	Rating	1	1
Roll Stability, 2 hours, 25°C/77°F, Penetration Change	ASTM D1831	% change	10	5
Wheel Bearing Test (6 hours @ 104°C/219°F)	ASTM D1263	% loss	6.58	0.06
Pressure Oil Separation (Cake Penetration)	US Steel	% change	2.13	1.79
Grease Mobility	US Steel	Grams/sec	0.1 @ 30°F	0.3 @ 0°F
Pumpability by Lincoln Ventmeter	US Steel	psi	480 @ 30°F	520 @ 20°F
DIN Classification	DIN 51502	-	KPF 1 K-30	KPF 2 K-20
ISO Classification	ISO 6743/9	-	L-XCCHB-1	L-XBCHB-2

Subject to usual manufacturing tolerances.

## Additional Information

In order to minimize potential incompatibilities when converting to a new grease, all previous lubricant should be removed as much as possible prior to operation. During initial operation, relubrication intervals should be monitored closely to ensure all previous lubricant is purged. Not to be used in precision and high speed bearings.

Castrol Molub-Alloy 777 ES  
07/05/2007, version 1.0

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