



Product Data

Castrol Tribol® 4020/460

Greases

Castrol Tribol 4020/460 Greases with TGOA® are elevated temperature, multi-service greases designed to extend the service life of bearings in heavy duty and elevated temperature applications.

TGOA is an additive package designed to reduce friction while providing surface protection and improvement due to its unique action on frictional surfaces. Because of the possible adverse effects on the environment, typical materials of expressed concern: i.e., antimony, barium lead, zinc; are NOT used in Castrol Tribol 4020/460 Greases.

Because of the ISO 460 base oil viscosity, **Castrol Tribol 4020/460 Greases** provide a heavier oil film for applications at slower speeds, higher loads, and/or higher temperatures.

Description

Castrol Tribol 4020/460 Greases are formulated from a petroleum base oil, a lithium complex thickener, and TGOA, the latest advancement in the field of friction and reducing and surface improving additive technology.

The load carrying, antiwear, and friction reducing capabilities of **Castrol Tribol 4020/460 Greases** exceed conventional complex greases. High performance is the result of the TGOA additives which, under relatively high specific loads and related temperatures, promote a nondestructive smoothing of surface roughness in the microrange. This smoothing effect leads to an increase in the actual load-bearing area and reduces friction.

The TGOA additives are very effective in protecting the machined surfaces of bearings during the critical "running-in" period. Good bearing surfaces are essential for long bearing life.

If, because of shock loads or stop-and-go operations, surface roughness peaks redevelop, the TGOA additive package automatically reactivates. Surface roughness is again smoother and lubrication optimized.

Applications

Castrol Tribol 4020/460 Greases and 4020/460-2 Greases meet NLGI consistency Grades 1 and 2 respectively. They are formulated from premium

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petroleum base oil, ISO VG 460. **Castrol Tribol 4020/460 Greases** with TGOA were formulated as multi-service lubricants for heavy-duty applications of plain and antifriction bearings from medium to high loads. They are designed for continuous operating temperatures up to 150°C/302°F, more frequent reapplication is required to prevent deterioration of the petroleum base fluid. **Reapplication cycles should be established that insures the grease does not stiffen in the bearing.**

Advantages

Castrol Tribol 4020/460 Greases with TGOA offer:

- Increased load carrying capability: achieved by higher viscosity base oils and surface smoothing and friction reducing properties of TGOA.
- Excellent temperature stability: dropping point over 238°C/460° F.
- Outstanding water washout characteristics and shear stability: as a result of a highly stable, advanced lithium complex thickener in addition to special highly controlled manufacturing techniques.

The TGOA additive technology provides these further advantages for bearings:

- Reduced friction and wear
- Reduced operating temperatures
- Reduced noise and
- Extended service life with reduced maintenance and repair costs.

Notes

Castrol Tribol 4020/460 Greases with TGOA should not be mixed with grease using a different thickener.

At higher temperatures (above 100°C/212°F to 150°C/302°F) relubrication intervals should be established by inspection. It is important that grease in bearings remains pliable.

For temperature about 150°C/302°F, regular reapplication of **Castrol Tribol 4020/460 Greases** must be considered to prevent deterioration of the petroleum base oil. For continuous service near 204°C/400°F, reapply **Castrol Tribol 4020/460 Greases** daily or once each shift. Reapply before the grease in the bearing stiffens.

For lower temperatures and/or higher speeds, **Castrol Tribol 4020/460 Greases** are available with a base oil viscosity of ISO VG 220.

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Castrol Tribol 4020/460 Greases should not be used for motor bearings operating at normal ambient conditions due to the high base fluid viscosity.

For specific terms, conditions, warranty and availability, refer to Castrol Performance Lubricants' Price list in effect at time of purchase.

Typical Characteristics

	460-1	460-2
NLGI Grade	1	2
Thickener Type	Lithium Complex	Lithium Complex
Worked Penetration, ASTM D 217, mm/10	310-340	265-295
Dropping Point, ASTM D 2265, C/F	249/480	249/480
Base Oil Properties		
Viscosity, ASTM D 445, ASTM D 2161		
@40°C, cST	460	460
@100°C, cST	28.5	28.5
@100°F, cST/SUS	534/2472	534/2472
@210°F, cST/SUS	30/142	30/142
Flash Point, ASTM D 92, C/F	232/450	232/450
Water Washout, ASTM D 1264 at 79°C/175°F, % of loss	4	4
Rust Prevention Properties ASTM D 1743, Rating	Pass	Pass
Emcor Rust Test, DIN 51802, IP 220/87, ASTM D6138	No. 0 (Pass)	No. 0 (Pass)
Copper Corrosion Test, ASTM D 4048	1b (Pass)	1b (Pass)
Four Ball EP Test, ASTM D 2596		
Load Wear Index, kg	80	80
Weld Load, kg	500	500
Four Ball Wear Test, ASTM D 2266		
Scar Diameter, mm	0.50	0.50
Timken EP Test, ASTM D 2596		
OK Value, kg/lbs	23/50	23/50
SRV Test, (DIN E 518340-02-S) 50° C, 300N, 2 hours		
Amplitude 1000μ, Frequency 50 Hz, μ,	0.08	0.08

Subject to usual manufacturing tolerances

All reasonable care has been taken to ensure that this information is accurate as of the date of printing. Nevertheless, such information may be affected by changes in the blend formulation occurring subsequent to the date of printing. Material Safety Data Sheets are available for all Castrol products. The MSDS must be consulted for appropriate information regarding storage, safe handling and disposal of a product.

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