



Product Data

Castrol Tribol 1100

Gear oils with TGOA

Description

Castrol Tribol™ 1100 gear oils with the TGOA™ (Tribol Gear Oil Additive) additive system represent a significant advancement in gear oil technology. Developed for service in enclosed gear drives, journals, and antifriction bearings, Tribol 1100 gear oils are typically used where heavy and shock load conditions prevail.

Tribol 1100 gear oils are manufactured from the highest quality petroleum base oils. Blended into this oil is the latest development in the field of surface improving additives designated TGOA. TGOA is an oil soluble additive package designed to reduce friction while providing surface protection and improvement. The TGOA additive package offers superior performance because of its unique action on frictional surfaces.

The TGOA additive package is activated by high specific loads and corresponding temperatures causing a chemical-physical reaction. This results in an equalization of surface roughness without creating abrasion. Therefore, surface roughness is reduced without the loss of surface material.

The results of the TGOA additives can be compared with a rolling process in the micro-range. The surface roughness is gradually levelled and smoothed. Through smoothing of the working surfaces, the loads are distributed over increasing areas and the actual load carrying area is enlarged.

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

Tribol 1100 range has passed the Cincinnati Milacron Thermal Stability Test. This test evaluates copper and steel corrosion and oxidation stability. Tribol 1100 gear oils are approved as P 74, P 59, and P 35 for the ISO 220, 320, and 460 grades respectively. These oils exceed minimum requirements according to DIN 51517 Part. 3 for CLP gear oils

Application

Typical applications are spur, helical, herringbone, bevel, and planetary gears. They are also used in general couplings and where fine filtration is required. Tribol 1100 gear oils may be used in antifriction and journal bearings and applied by oil mist systems.

Tribol 1100 gear oils with the TGOA additive package are most effective when used from the initial fill of the equipment. It has also proven to be effective in applications where surfaces have previously been damaged in service.

Advantages

Because of equalization of surface roughness on interacting surfaces, the following advantages can be obtained:

- Running-in oils or additives are no longer required. Lapping of gears is no longer necessary.
- Regeneration of damaged frictional surfaces on a micro-scale.
- Less friction.
- Reduced wear
- Lower operating temperature.
- Decreased noise level.
- Longer life of gears and bearings.
- Reduced maintenance cost.

Additional Information

Tribol 1100 gear oils are compatible with other petroleum gear oils. This means that traces of previous oil remaining in the gear case after draining should not pose problems. However, the beneficial effects of the TGOA additives are reduced when Tribol 1100 gear oils are mixed with other oils. A thorough cleaning of the gearbox is highly recommended to achieve the maximum benefits of Tribol 1100.

Tribol 1100
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Die technischen Daten sind Durchschnittswerte, die jedoch innerhalb der festgelegten Spezifikation liegen. Diese Angaben entsprechen umfangreichen Prüfungen und Praxiserfahrungen. Bei der Vielfalt der Anwendungen kann daraus keine Verbindlichkeit für die Bewährung in jedem Einzelfall hergeleitet werden. Praxiserprobungen empfohlen. Änderungen der Zusammensetzung bleiben Vorbehalten, gegebenenfalls in Absprache mit dem Kunden. Weitere Produkt-Informationen sind bei der Anwendungstechnik der Deutsche BP Aktiengesellschaft zu erfragen.

Deutsche BP AG – Industrial Lubricants & Services, Erkelenzer Str. 20, 41179 Mönchengladbach
Tel: +49 (0)2161 909-30 Fax: +49 (0)2161 909-481

www.castrol.com/industrial

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Technical data

	Unit	Value									Test method
CASTROL TRIBOL® 1100 gear oils	-	1100/68	1100/100	1100/150	1100/220	1100/320	1100/460	1100/680	1100/1000	1100/1500	-
ISO viscosity grade	-	68	100	150	220	320	460	680	1000	1500	DIN 51519
Density at + 15 °C	kg/m³	888	892	897	904	908	916	923	931	948	DIN 51757
Kin. viscosity at + 40 °C	mm²/s	70	100	151	222	317	464	673	956	1487	DIN 51366
+ 100 °C		8.9	11.2	14.7	18.9	23.6	29.9	35.9	42.7	54.7	
Viscosity index	-	100	97	96	95	95	94	86	80	84	ISO 2909
Flash point, COC	°C	236	240	245	245	247	248	250	253	260	DIN ISO 2592
Pour point	°C	- 33	- 30	- 27	- 24	- 21	- 21	- 18	- 18	- 15	DIN ISO 3016
Corrosion test (corrosion degree, test A)	-	0									DIN 51355
Copper corrosion (3 hrs @ 100 °C)	-	1a									EN ISO 2160
Four ball wear test (1 h, 40 kg, 1800 min ⁻¹ , 75 °C) Wear scar diameter	mm	0.4									ASTM D 2266
SRV test, 50 °C, 300 N, 2 h Amplitude 1 mm, frequency 50 Hz	µ	min. 0.07 – max. 0.09									DIN 51834-02
FZG test (A/8.3/90) Scoring load stage	-	> 12	> 12	> 12	> 12	> 14	> 12	> 12	> 12	-	DIN 51354
FZG micropitting test Micropitting load carrying capacity: high	-	10									FVA No. 54
Water content	-	below measurable content									DIN/ISO 3733
Foaming properties Sequence I Sequence II Sequence III	ml	0 > 50/0 0									ISO 6247

1 mm²/s $\hat{=}$ 1cSt

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