Castrol Tribol® 1100 Range

Gear oils with TGOA®

Description

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

- Castrol 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 outperforms all other EP and antiwear additives 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 roughnesses are 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.

- During the running-in process, the TGOA® additive package creates an optimum of smooth contact surfaces.

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

Application

- Castrol Tribol® 1100 oils are particularly valuable in the running-in phase as well as in applications where surfaces have already been damaged in the micro-range.
- Typical applications are spur, helical, herringbone, bevel and planetary gears as well as in geared couplings.
- Castrol Tribol 1100® gear oils may be used in rolling and sliding bearings.
- Particularly suitable for Heavy duty reciprocating pumps for drilling mud or cement placement offshore and onshore drilling sites.

Conditions of Use

- Castrol 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 will not pose any problems. However, the beneficial effects of the TGOA® additives are reduced when Castrol Tribol® 1100 gear oils are mixed with other gear oils.
- A thorough cleaning of the gearbox is highly recommended to achieve the maximum benefits.
- Quality Standard:
  Castrol Tribol® 1100 gear oils exceed minimum requirements according to DIN 51517 T. 3 for CLP gear oils.

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.
- Prevention and stopping of running-in pitting if not caused by poor design or heavy overloading of the gears.
- 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.

Typical Characteristics

Name	Method	Units	1100 / 150	1100 / 220	1100 / 320	1100 / 460	1100 / 680	1100 / 1000	1100 / 1500
ISO Viscosity Grade	DIN 51519		150	220	320	460	680	1000	1500
Density @ 15°C	DIN 51757	g/ml	0.901	0.902	0.912	0.920	0.930	0.945	0.948
Kinematic Viscosity @ 40°C	DIN 51366	mm²/s	151	222	317	464	673	956	1487
Kinematic Viscosity @ 100°C	DIN 51366	mm²/s	14.7	18.9	23.6	29.9	35.9	42.7	54.7
Viscosity Index	84 ISO 2909		97	96	95	95	94	86	80
Flash Point	DIN ISO 2592	°C	250	250	254	256	260	260	260
Pour Point	DIN ISO 3016	°C	-27	-24	-21	-21	-18	-18	-15
Corrosion Test (Corrosion Degree, Test A)	DIN 51355		0	0	0	0	0	0	0
Copper Corrosion (Corrosion Degree, 100 A3)	EN ISO 2160		1	1	1	1	1	1	1
Four Ball Wear Test (1 h, 40 kg, 1800 min-1, 75°C) Wear Scar Diameter	ASTM D2266	mm	0.4	0.4	0.4	0.4	0.4	0.4	0.4
SRV Test, 50°C, 300 N, 2 h, Amplitude 1 mm, Frequency 50 Hz	DIN 51834-02	µ	min. 0.07 - max. 0.09	min. 0.07 - max. 0.09	min. 0.07 - max. 0.09	min. 0.07 - max. 0.09	min. 0.07 - max. 0.09	min. 0.07 - max. 0.09	min. 0.07 - max. 0.09
FZG Test (A / 8.3 / 90) Scoring Load Stage	DIN 51354	FLS	>12	>12	>12	>12	>12	>12	>12

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FZG Micropitting Test Micropitting Load Carrying Capacity: High	FVA No. 54		10	10	10	10	10	10	10
Water Content	DIN / ISO 3733		Below Measurable Content	Below Measurable Content	Below Measurable Content	Below Measurable Content	Below Measurable Content	Below Measurable Content	Below Measurable Content
Foaming Properties, Sequence I	ISO 6247	ml	0	0	0	0	0	0	0
Foaming Properties, Sequence II	ISO 6247	ml	> 50 / 0	> 50 / 0	> 50 / 0	> 50 / 0	> 50 / 0	> 50 / 0	> 50 / 0
Foaming Properties, Sequence III	ISO 6247	ml	0	0	0	0	0	0	0

The above figures are typical of those obtained with normal production tolerance and do not constitute a specification.

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