



## Product Data

# Castrol Tribol<sup>®</sup> 800 Series

Synthetic Gear Oils

**Castrol Tribol 800 Series Synthetic Gear Oils** were developed for the lubrication of heavily loaded gears, bushings and bearings which may operate over a broad range of ambient temperatures at elevated temperatures (>80°C/176°F). They are particularly intended to extend the service life of both lubricant and machine parts where unusually high operating and oil reservoir temperatures are encountered. Castrol Tribol 800 Oils include seven ISO Viscosity Grades including: 150 through 2200, which correspond to AGMA Gear Oil Numbers 4EP through 8A EP respectively.

**Castrol Tribol 800 Series Synthetic Gear Oils** were developed to fulfill the following objectives:

- Sustained oil reservoir temperatures of 90°C/200°F with exposure to temperatures approaching 200°C/400°F
- Very high viscosity index (VI) for viscosity-temperature stability without the use of VI improvers which can shear in service
- Anti-wear and extreme pressure (EP) performance characteristics exceeding AGMA requirements for EP Gear Oils

### Description

The high performance characteristics of **Castrol Tribol 800 Series Synthetic Gear Oils** are achieved with select polyglycol based synthetic fluids. They feature chemical and thermal stability (high viscosity index), water solubility, and compatibility with metals and elastomers most commonly used in machine construction.

The naturally high resistance to oxidation of the synthetic base fluid is further enhanced by inhibitors. Corrosion protection is very effective even in the presence of water. A fully dissolved package of high performance additives act in combination for superior anti-wear and EP performance.

### Applications

**Castrol Tribol 800 Series Synthetic Gear Oils** are especially suited to reservoirs and circulation systems operating at high temperatures because of heat generated in severe service or high temperatures in the application. Castrol Tribol 800 Gear Oils are intended for all types of heavily loaded gears including spur, bevel, and worm gears.

Although well suited for all types of gearing and bearings, 800 Series Oils are

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particularly effective in controlling wear and reducing friction between sliding surfaces. In addition, they possess a high degree of affinity for cupric metal alloys.

### Advantages

**Shear Stability** - The synthetic base offers high viscosity index without the addition of VI improvers. In service, VI improvers can shear, lowering oil viscosity and reducing protection critical for gear sets and bearings. The naturally high VI of Castrol Tribol 800 assures full protection for components over a wide range of operating temperatures, speed, and load conditions.

- **Long life, extended drain intervals** are possible because of the natural aging and oxidation resistance of the synthetic base fluid. Advanced Castrol Tribol lubrication technology forms friction-fighting, anti-wear films that can significantly reduce local operating temperatures as gear teeth or bearing surfaces come into contact.
- **More protection for components in severe service.** The extended EP performance of Castrol Tribol 800 Gear Oils offers protection beyond the capabilities of conventional petroleum oils.
- **Wear protection** under conditions of extreme temperature fluctuation and high loads.
- **High efficiency and lower oil temperature**, especially in worm gear units.
- **High corrosion protection** of cast and steel surfaces through special additive packages, even in the presence of water.
- **Compatibility** with non-ferrous metals through well-formulated synergistic additives.
- **Potential energy savings** as a result of a lower coefficient of friction.
- **Reduction of maintenance costs** as a result of significantly increased life of the lubricant.

### Notes

**Castrol Tribol 800 Series Synthetic Gear Oils** are water soluble and spills may be cleaned up with water. They are are **NOT** compatible with mineral (petroleum) based lubricants.

Cleaning lubrication systems with a flushing oil or **Castrol Tribol 800 Synthetic Gear Oil** prior to the first filling is recommended. To achieve long drain cycles and obtain the economic advantages, systems must be free of contaminants.

**Castrol Tribol 800 Synthetic Gear Oils** are compatible with most seals including Viton A and nitrile or Buna N (NBR). 800's are **NOT** compatible with neoprene (polychloroprene) and butadiene seals - mixed polymers, styrenebutadienes, polystyrene, or methacrylates.

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### Typical Characteristics

	150	220	320	460	680	1000	2200
ISO Viscosity Grade, ASTM D 2422	150	220	320	460	680	1000	2200
AGMA Lubricant Number	4EP	5EP	6EP	7EP	8EP	8A EP	-----
Specific gravity @ 60°F ASTM D1298	1.03	1.04	1.04	1.04	1.05	1.06	1.06
Viscosity, ASTM D 445, D 2161*:							
@0°C, mm <sup>2</sup> /s	1006	1530	1855	2959	3986	5732	14580
@40°C, mm <sup>2</sup> /s	157	222	317	467	655	935	2350
@100°C, mm <sup>2</sup> /s	29	38	59	80	113	157	372
@150°C, mm <sup>2</sup> /s	12	15	24	31	43	58	130
@32°F, SUS	4641	7059	8558	13651	18389	26445	67265
@100°F, SUS	791	1122	1593	2355	3299	4711	11864
@210°F, SUS	141	185	281	382	541	752	1783
@300°F, SUS	68	80	117	149	206	279	623
Viscosity Index, ASTM D 2270	225	225	253	254	271	284	325
Flash Point, ASTM D 92, COC, °C/°F	249/48 0	282/540	282/540	282/540	282/54 0	282/540	271/520
Fire Point, ASTM D 92, COC, °C/°F	304/58 0	304/580	304/580	304/580	304/58 0	304/580	310/590
Pour Point, ASTM D 97, °C/°F	-42/-45	-32/-25	-30/-20	-30/-20	-30/-20	-28/-15	-21/-5
Rust Test, ASTM D 665 Procedure A (Distilled Water)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Copper Corrosion, ASTM D-130 3 hrs, 100°C	1a	1a	1a	1a	1a	1a	1a
Timken Extreme Pressure Test, ASTM D 2782 OK Value, kg/lbs	23/50	23/50	23/50	23/50	23/50	23/50	36/80
Four Ball Wear Test (40 kg, 75°C/167°F, 1800 rpm, 1 hr) Scar Diameter, mm	0.35	0.35	0.35	0.35	0.35	0.35	0.34
Four Ball Extreme Pressure Test, ASTM D 2783:							
Load Wear Index, kg	35	35	35	35	35	35	97
Weld Load, kg	200	200	200	200	200	200	315
Falex Wear Test, ASTM D 2670, wear teeth	+2	+2	+2	+2	+2	+2	+2
FZG Test, DIN 51534, Fail Stage	>12	>12	>12	>12	>12	>12	>12
FZG Micropitting Test, FVA-Nr.54, Load Stage	>10	>10	>10	>10	>10	>10	>10

The viscosity-temperature relationship of these synthetic fluids is not a straight line function on the viscosity-temperature diagram used in Test Methods ASSTM D341 and DIN 51536

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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