Product Data Sheet

Optigear™ Synthetic 800 Range

Synthetic gear oils

Description

Castrol Optigear Synthetic™ 800 Range (previously called Tribol™ 800) synthetic gear oils have been developed for the lubrication of heavily loaded gears, bushings and bearings which may operate over a broad range of temperatures from ambient to elevated temperatures (>80°C). 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. The high performance characteristics of Optigear Synthetic 800 are achieved with select polyalkyleneglycol (PAG) 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. Also, a package of high performance additives acts in combination for superior anti-wear and Extreme Pressure (EP) performance.

Application

The Optigear Synthetic 800 range is especially suited to reservoirs and circulation systems operating at high temperatures because of heat generated in severe service or high temperatures in the application. Optigear Synthetic 800 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, the Optigear Synthetic 800 range is 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 (VI) 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 Optigear Synthetic 800 assures full protection for components over a wide range of operating temperatures, speeds, 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 Optigear Synthetic 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 Optigear Synthetic 800 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.

Typical Characteristics

Name	Method	Units	100	150	220	320	460	680	1000	1500	2200
ISO Viscosity Grade	-	-	100	150	220	320	460	680	1000	1500	2200
AGMA NUMBER	-	-	3EP	4EP	5EP	6EP	7EP	8EP	8EP	-	-
Density @ 15°C	ASTM D4052 / ISO 12185	kg/m³	1050	1060	1070	1074	1075	1070	1065	1060	1060
Kinematic Viscosity @ 40°C	ASTM D445 / ISO 3104	mm²/s	100	150	220	320	460	680	1000	1500	2200
Kinematic Viscosity @ 100°C	ASTM D445 / ISO 3104	mm²/s	18	26	34	50	72	102	155	230	350
Viscosity Index	ASTM D2270 / ISO 2909	-	205	210	215	230	240	250	275	290	320
Pour Point	ASTM D97 / ISO 3016	°C	-45	-36	-33	-30	-30	-27	-24	-12	-14
Flash Point - open cup method	ASTM D92 / ISO 2592	°C	280	280	290	290	290	290	390	290	271
Copper corrosion (3 hrs @ 100°C)	ASTM D130 / ISO 2160	Rating	1a	1a	1a	1a	1a	1a	1a	1a	1a
Rust test - distilled water (24 hrs)	ASTM D665A / ISO 7120	-	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Four Ball Wear test - Wear Scar Diameter (300N / 1 hr)	DIN 51350-3B	mm	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	>12	>12	>12	>12	>12	>12	>12	>12	>12
FZG Micropitting test @ 60°C	FVA 54-7	Failure Load Stage	-	-	>10	>10	>10	>10	>10	>10	>10
Foam Sequence I - tendency / stability	ASTM D892 / ISO 6247	ml/ml	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0

The viscosity-temperature relationship of these synthetic fluids is not a straight line function on the viscosity-temperature diagram used in test methods ASTM D341 and DIN 51536.

Subject to usual manufacturing tolerances.

Additional Information

Optigear Synthetic 800 synthetic gear oils are water soluble, so spills may be cleaned up with water. They are NOT compatible with mineral (petroleum) based lubricants. Condensation water may be absorbed without the damage of corrosion or a change in viscosity. Cleaning lubrication systems with a flushing oil or Optigear Synthetic 800 prior to the first filling is recommended. To achieve long drain cycles and obtain the economic advantages, systems must be free of contaminants. The Optigear Synthetic 800 range is 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, stryenebutadienes, polystyrene, or methacrylates.

This product was previously called Tribol 800 Range. The name was changed in 2015.

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