

Optigear Synthetic X 320 WTO

Synthetic Industrial Gear Oil

Description

Castrol Optigear™ Synthetic X 320 WTO is based on synthetic hydrocarbons and Castrol's Microflux Trans (MFT) Plastic Deformation (PD) additive and surface improvement additive package.

MFT PD helps improve lubricant performance when operating temperature and loads reach a certain level of activation energy, by enabling the micro-smoothing of surface roughness without increasing wear. The smoothed surface delivers optimum wear protection and an extremely low coefficient of friction, especially in applications which experience extreme pressure, shock loads, vibrations or low speeds. MFT PD helps to protect against scuffing and shock loading, while maintaining a high load carrying capacity, and can help prevent the progression of micro-pitting in pre-damaged gears.

Application

Optigear Synthetic X 320 WTO may be used in spur gear, bevel gears or planetary gear units and in heavy loaded gear units, e.g. wind turbine main gears. It is also suitable for the lubrication of oil-lubricated rolling bearings.

Depending on the specific application, Optigear Synthetic X may be used in an operating temperature range from -35 °C to +95 °C (refer to a Castrol technician for more information, if necessary).

Optigear Synthetic X 320 WTO is a CLP-HC gear oil (according to DIN 51502) formulated with with detergent additives and exceeds the minimum requirements according to DIN 51517 (2003), part 3, CLP gear oils.

Advantages

- High load carrying capacity.
- Superior micro pitting protection.
- Excellent friction reduction.
- Good filtration properties.
- Excellent bearing lubrication suitability.

Typical Characteristics

Name	Method	Units	Optigear Synthetic X 320 WTO
ISO Viscosity Grade	-	-	320
Density @ 15°C / 59°F	ISO 12185 / ASTM D4052	kg/m ³	850
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm ² /s	325
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm ² /s	40.8
Viscosity Index	ISO 2909 / ASTM D2270	-	179
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	>250/482
Pour Point	ISO 3016 / ASTM D97	°C/°F	-45/-49
Rust test - distilled water (24 hrs)	ISO 7120 / ASTM D665A	-	Pass
Copper corrosion (3 hrs@100°C/212°F)	ISO 2160 / ASTM D130	Rating	1
FE-8 Bearing Wear test increased load (F.562831.01-7.5/100-80)	DIN 51819-3 (modified)	roller wear (Mw50), mg	<5
FE-8 Bearing Fatigue test (F.562831-75/100-70 800 hrs)	DIN 51819-3 (modified)	roller wear (Mw50), mg	<5
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	>14
FZG Micropitting test @ 60°C/140°F	FVA 54-7	Failure Load Stage Micropitting Rating	=10 High
FZG Micropitting test @ 90°C/194°F	FVA 54-7	Failure Load Stage Micropitting Rating	>10 High
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	<100/10

Subject to usual manufacturing tolerances.

Additional Information

Optigear Synthetic X gear oil can be applied by an oil can, oil cup reservoir, splash, spray mist or by automatic dispensing equipment and central or circulation systems.

To achieve an optimum lifetime of your elastomer sealings we recommend the use of Viton (FKM) based materials.

Optigear Synthetic X has excellent detergent and cleaning properties that help ensure clean operation of a gearbox and an additive system designed to give maximum gear and bearing protection. However, to achieve the optimum performance level of these oils, we recommend removal of any previous oil to avoid compatibility issues. (Refer to manufacturer oil change procedures and the Castrol flushing procedure).

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