

Optigear Synthetic X

Synthetic Gear Oils

Description

Castrol Optigear™ Synthetic X is based on synthetic hydrocarbons and a special plastic deformation (PD) and surface improvement additive package.

The additive package, when activated by high specific loads and corresponding temperatures, helps to equalize surface roughness without creating abrasion leading to the surface improvement (plastic deformation).

Application

Optigear Synthetic X 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 -30 °C to +95 °C.

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

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.

It is compatible with mineral oils and esters. This means that traces up to 3% of previous oil in the gear case after draining will not pose any problems. However, the beneficial effects of the special PD additives are reduced when mixed with other gear oils

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

Advantages

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

Typical Characteristics

Name	Method	Units	X 100	X 150	X 220	X 320	X 460	X 680
ISO Viscosity Grade		-	100	150	220	320	460	680
Density @ 15°C / 59°F	ISO 12185 / ASTM D4052	kg/m	844	847	850	852	856	858
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm ² /s	98.3	146	218	325	459	675
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm ² /s	14	19.0	25.9	34.9	45.0	91.2
Viscosity Index	ISO 2909 / ASTM D2270	-	146	148	151	152	153	159
Flash Point - open cup method	ISO 2592 / ASTM D92	°C/°F	>250/ 482	>250/ 482	>250/ 482	>250/ 482	>250/ 482	>250/ 482
Pour Point	ISO 3016 / ASTM D97	°C/°F	-42/ 43.6	-39/ 38.2	-33/ 27.4	-33/ 27.4	-27/ 16.6	-27/ 16.6
Rust test - distilled water (24 hrs)	ISO 7120 / ASTM D665A	-	Pass	Pass	Pass	Pass	Pass	Pass
Copper corrosion (3 hrs @ 100°C/212°F)	ISO 2160 / ASTM D130	Rating	1a	1a	1a	1a	1a	1a
FE-8 Bearing Wear test - increased load (F.562831.01-7.5/100-80)	DIN 51819-3 (modified)	roller wear (Mw50)	<10	<10	<10	<10	<10	<10
FE-8 Bearing Fatigue test (F.562831-75/100-70 800 hrs)	DIN 51819-3 (modified)	roller wear (Mw50)	<20	<20	<20	<20	<20	<20
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	>14	>14	>14	>14	>14	>14
FZG Micropitting test @ 60°C/140°F	FVA 54-7	Failure Load Stage / Micropitting Rating	>10/ High	>10/ High	>10/ High	>10/ High	>10/ High	>10/ High
FZG Micropitting test @ 90°C/194°F	FVA 54-7	Failure Load Stage / Micropitting Rating	>10/ High	>10/ High	>10/ High	>10/ High	>10/ High	>10/ High
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	<100/ 10	<100/ 10	<100/ 10	<100/ 10	<100/ 10	<100/ 10

Subject to usual manufacturing tolerances.

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