



## Castrol Alpha SP 680

Gear oils

### Description

Castrol Alpha™ SP 680 gear oil is based upon highly refined mineral oil, enhanced with an extreme pressure additive technology providing good thermal stability and high load carrying capacity. The extreme pressure additive system not only provides high load carrying capacity, but was designed to provide microscopic wear protection. Microscopic wear protection, also known as micropitting protection, is critical in preventing destructive wear at the micro level therefore extending gear life and meeting the evolving demands of smaller and higher output gear boxes.

### Application

Castrol Alpha SP 680 is recommended for the lubrication of industrial gear boxes using forced circulation or splash and oil bath lubrication. It may be used for the lubrication of spur and helical gears and in some lightly loaded worm type gear applications. It has very good viscosity characteristics to ensure starting torques are not excessively high in cold operating conditions. The additives are compatible with the ferrous and non-ferrous metals used in industrial gear units. Castrol Alpha SP 680 is compatible with the most common types of seal materials.

### Product Performance Claims

Castrol Alpha SP 680 meets the requirements of:

- DIN 51517 Part 3

Alpha SP is classified as follows: DIN Classification is CLP

### Advantages

- Extreme Pressure (EP) performance protect gears against wear and shock-loading as measured by FZG performance and demonstrated extensively in the field.
- Alpha SP 'Clean gear' additive technology provides low deposit formation
- Good water separation and demulsification
- High protection against corrosion and wear

## Typical Characteristics

Name	Method	Units	SP 680
AGMA No.	-	-	8EP
ISO Viscosity Grade	-	-	680
Density @ 15°C / 59°F	ISO 12185 / ASTM D4052	kg/m <sup>3</sup>	920
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	680
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	37.3
Viscosity Index	ISO 2909 / ASTM D2270	-	85
Pour Point	ISO 3016 / ASTM D97	°C	-6
Flash Point - open cup method	ISO 2592 / ASTM D92	°C	230
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	10/0
Copper corrosion (3 hrs@100°C/212°F)	ISO 2160 / ASTM D130	Rating	1b
Rust test - synthetic seawater (24 hrs)	ISO 7120 / ASTM D665B	Rating	Pass
Timken OK Load test	ASTM D2782	kg/lb	43/95
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	>12
FZG Micropitting test @ 90°C/194°F	FVA 54-7	Failure Load Stage / Micropitting Rating	>10/High

Subject to usual manufacturing tolerances.

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