



## Castrol Alpha SP Range

Gear oils

### Description

The Castrol Alpha™ SP gear oil range of high quality lubricants are 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

The Alpha SP range is recommended for the lubrication of industrial gear boxes using forced circulation or splash and oil bath lubrication. They may be used for the lubrication of spur and helical gears and in some lightly loaded worm type gear applications. They have 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. The Alpha SP range is compatible with the most common types of seal materials.

### Product Performance Claims

Specific grades within the Alpha SP range meet the requirements of:

- DIN 51517 Part 3
- AGMA 9005 - E02
- AIST 224
- David Brown S1.53.101 Type E
- Flender Rev 16 for Helical-, Bevel- and Planetary Gear Units (ISO VG 150 - 460)

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 68	SP 100	SP 150	SP 220	SP 320	SP 460	SP 680
AGMA No.	-	-	2EP	3EP	4EP	5EP	6EP	7EP	8EP
ISO Viscosity Grade	-	-	68	100	150	220	320	460	680
Density @ 15°C / 59°F	ISO 12185 / ASTM D4052	kg/m <sup>3</sup>	880	890	890	890	900	900	920
Kinematic Viscosity @ 40°C / 104°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	68	100	150	220	320	460	680
Kinematic Viscosity @ 100°C / 212°F	ISO 3104 / ASTM D445	mm <sup>2</sup> /s	8.8	11.2	14.5	18.7	24.0	30.5	37.3
Viscosity Index	ISO 2909 / ASTM D2270	-	>95	>95	>95	>95	>95	>95	>95
Pour Point	ISO 3016 / ASTM D97	°C	-21	-21	-18	-15	-9	-9	-6
Flash Point - open cup method	ISO 2592 / ASTM D92	°C	215	219	223	225	226	225	229
Foam Sequence I - tendency / stability	ISO 6247 / ASTM D892	ml/ml	10/0	10/0	10/0	10/0	10/0	10/0	10/0
Copper corrosion (3 hrs @ 100°C/212°F)	ISO 2160 / ASTM D130	Rating	1b	1b	1b	1b	1b	1b	1b
Rust test - synthetic seawater (24 hrs)	ISO 7120 / ASTM D665B	Rating	Pass	Pass	Pass	Pass	Pass	Pass	Pass
FZG Gear Scuffing test - A/8.3/90	ISO 14635-1	Failure Load Stage	-	>14					
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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18 Jun 2019

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Castrol Australia Pty Limited - ABN 87 008 459 407 – 717 Bourke Street, Docklands Vic 3008  
Technical Advice Line: 1300 557 998 Customer Service: 1300 722 088

<http://msdspd.castrol.com>

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