



## Alphasyn EP 220

Synthetic gear oils

### Description

Castrol Alphasyn™ EP 220 gear oil is a high quality synthetic lubricant based on poly- alphaolefin (PAO) fluids and sulphur/phosphorus Extreme Pressure (EP) additive technology providing good thermal stability and high load carrying capacity.

### Application

Alphasyn EP 220 has been formulated for use in all types of enclosed gears including heavy and shock-loaded gears and bearings where EP properties are required. It is suitable for use in gearboxes where micro-pitting resistance is required and for a wide range of applications in extreme environments, for example mining and quarrying, marine applications and paper production.

The use of a PAO base stock provides an inherently high Viscosity Index (VI) and low pour point making the product suitable for use over a wide temperature range. Alphasyn EP 220 is fully compatible with nitrile, silicone and fluropolymer seal materials. Alphasyn EP 220 is classified as follows: DIN Classification is CLP.

Alphasyn EP 220 meets the requirements of:

- DIN 51517 Part 3
- AGMA 9005 - D94
- US Steel 224
- David Brown Type E
- Hansen Transmissions
- Flender
- Lohmann & Stofferfoht

### Advantages

- Full EP performance\* gives maximum protection of gears against wear and shock loading, including protection against micro-pitting.
- Good thermal and oxidative stability provides reliable operation and extended operating life when compared to mineral oil based products.
- High corrosion protection for gears.
- Inherently high Viscosity Index (VI) makes the product suitable for operations over a wide temperature range.
- Rapid air release and good performance in the Flender Foam Test prevents foaming and bearing damage.
- Good water separation and demulsification characteristics means reduced down time through prolonged lubricant life and increased equipment reliability.
- PAO based lubricant provides good compatibility with seals, paints and mineral oil based lubricants.

\* ISO 320 grade achieved FZG >14 rating under A16.6./90 (double speed) test conditions

## Typical Characteristics

| Name                                      | Method     | Units              | Alphasyn EP 220 |
|---|------------|--------------------|-----------------|
| Density @ 15C                             | ASTM D4052 | g/ml               | 0.86            |
| Viscosity, Kinematic 40C                  | ASTM D445  | mm <sup>2</sup> /s | 220             |
| Viscosity, Kinematic 100C                 | ASTM D445  | mm <sup>2</sup> /s | 25              |
| Viscosity Index                           | ASTM D2270 | None               | 140             |
| Pour Point                                | ASTM D97   | °C                 | -42             |
| Demulsification 82°C, mins to 40/37/3     | ASTM D1401 | minutes            | 5               |
| Phosphorus, ppm                           | ASTM D4951 | mg/kg (ppm)        | 370             |
| Calcium, ppm                              | ASTM D4951 | mg/kg (ppm)        | 21              |
| Flash Point, PMCC                         | ASTM D93   | °C                 | 220             |
| Oxidation Stability @ 120C (KV @ 100C)    | ASTM D2893 | % Increase         | 3               |
| Timken OK Load                            | ASTM D2782 | lb                 | 90              |
| FZG Gear Failure Load Stage ( A/8.3/90 )  | DIN 51354  | -                  | >12             |
| FZG Gear Failure Load Stage ( A/16.6/90 ) | DIN 51354  | -                  | >12             |
| Acid Number, Total (Potentiometric)       | ASTM D664  | mg KOH/g           | 0.6             |

Subject to usual manufacturing tolerances.

## Storage

All packages should be stored under cover. Where outside storage is unavoidable drums should be laid horizontally to avoid the possible ingress of water and damage to drum markings. Products should not be stored above 60°C, exposed to hot sun or freezing condition

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10 Junction Avenue , Parktown , Johannesburg , 2193 , South Africa  
 +27 11 488 5111, 0860 222 166 (SA), 0800 111 551 (SA)  
[www.castrol.co.za](http://www.castrol.co.za)