

## Performance Bio GE ESS Range

Biodegradable synthetic gear oils

### Description

CASTROL PERFORMANCE BIO GE™ ESS synthetic gear oils are formulated from a synthetic ester and are readily biodegradable (more than 80%) according to CEC L-33-A-93. Anti-wear and corrosion protection additives improve the natural characteristics of the synthetic base oil. CASTROL PERFORMANCE BIO GE ESS gear oils are available in the viscosity grades ISO VG 220 to ISO VG 320.

### Application

- CASTROL PERFORMANCE BIO GE ESS gear oils are suited for the application in spur, helical and planetary gear units, couplings, rolling and sliding bearings in farm and construction machinery, wind turbines, sewage plants, cranes etc.
- CASTROL PERFORMANCE BIO GE ESS synthetic gear oils may be used where for environmental reasons a biodegradable gear oil is required.
- Temperature application range: from - 25°C to + 90°C

### Advantages

- More than 80% readily biodegradable according CEC L-33-A-93
- Load stage >12 is passed in the FZG test at double peripheral speed
- CASTROL Performance Bio GE ESS passes the FZG micropitting test with the result: high micropitting load carrying capacity
- Excellent oxidation stability allows extended oil change cycles
- Reduced consumption and smaller amounts of lubricants disposed protect the environment
- High viscosity index allows start-ups at low temperatures and provides for a thicker lubricating film at high temperatures for additional anti-wear protection

## Typical Characteristics

| Name                                | Test Method            | Units              | 220 ESS    | 320 ESS    |
|-------------------------------------|------------------------|--------------------|------------|------------|
| ISO Viscosity Grade                 | -                      | -                  | 220        | 320        |
| Density @ 15°C / 59°F               | ASTM D4052 / ISO 12185 | kg/m <sup>3</sup>  | 960        | 970        |
| Kinematic Viscosity @ 40°C / 104°F  | ASTM D445 / ISO 3104   | mm <sup>2</sup> /s | 220        | 320        |
| Kinematic Viscosity @ 100°C / 212°F | ASTM D445 / ISO 3104   | mm <sup>2</sup> /s | 29.3       | 38.2       |
| Viscosity Index                     | ASTM D2270 / ISO 2909  | -                  | 170        | 170        |
| Pour Point                          | ASTM D97 / ISO 3016    | °C/°F              | -24 / -11  | -21 / -6   |
| Flash Point - open cup method       | ASTM D92 / ISO 2592    | °C/°F              | >230 / 446 | >230 / 446 |

## Additional Information

CASTROL PERFORMANCE BIO GE ESS synthetic gear oils are compatible with commonly used seals and paints. Due to the high number of different seal substances and paints appropriate compatibility tests are recommended.

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