



Spartan™ EP Series

Mobil Industrial , South Korea

Gear Oil

Product Description

Spartan™ EP lubricants are a family of industrial extreme pressure gear lubricants. They are formulated with high quality mineral oils, which help reduce sludge forr helping to increase oil service life. Spartan EP oils contain a sulphur / phosphorus extreme pressure additive system that gives high load carrying ability and prot against wear. In addition these oils provide strong protection against corrosion of steel and copper containing alloys and resist foaming. Spartan EP oils have good handling properties so that water rapidly separates from the oil for easy water elimination.

Spartan EP oils can be used in either splash or circulating systems. Spartan EP gear oils are suitable for use wherever industrial gear oil is required. Spartan EP grac suitable for the lubrication of heavily loaded enclosed gear sets including spur, helical and bevel designs and provide protection in applications where shock l occurs. Spartan EP may also be used in worm gears where specified. They may also be used for lubrication of plain bearings, and in rolling contact (anti-friction) be

Features and Benefits

- Spartan EP gear oils offer the following benefits:
- Spartan EP oils enjoy a reputation for quality and consistency, as well as the ability to handle a variety of tough gear applications. They are manufactured with high mineral stocks and a specially chosen additive system. Spartan EP lubricants are manufactured under the highest level of quality assurance and control in our r blending facilities.
- EP wear protection of gears and bearings
  - Resistance to sludge formation leads to outstanding system cleanliness
  - Very good oxidation resistance for long oil charge life
  - Very good demulsibility to ease water removal

Applications

- Spartan EP gear oils are used in a wide range of industrial spur, helical, bevel and steel-on-steel worm gearing.
- Specific applications include:
- Drives for conveyers, agitators, dryers, fans, mixers, presses, pulpers, pumps, screens, extruders, oil well pumps
  - Industrial bearings- journal and rolling contact, especially operating at low speeds and high loads

Specifications and Approvals

| This product meets or exceeds the requirements of: | 150 | 220 | 320 | 460 |
|--|-----|-----|-----|-----|
| AGMA 9005-F16                                      | X   |     | X   | X   |
| DIN 51517-3:2018-09                                | X   | X   | X   | X   |
| ISO L-CKC (ISO 12925-1:2018)                       |     |     |     | X   |
| ISO L-CKD (ISO 12925-1:2018)                       | X   | X   |     |     |

Properties and Specifications

| Property | 150 | 220 | 320 | 460 |
|----------|-----|-----|-----|-----|
|----------|-----|-----|-----|-----|

| Property  | 150     | 220     | 320     | 460     |
|---|---------|---------|---------|---------|
| Grade   | ISO 150 | ISO 220 | ISO 320 | ISO 460 |
| Copper Strip Corrosion, 3 h, 100 C, Rating, ASTM D130             | 1B      | 1B      | 1B      | 1B      |
| Density @ 15.6 C, kg/l, ASTM D4052                                | 0.89    | 0.89    | 0.90    | 0.90    |
| EP Properties, Timken OK Load, lb, ASTM D2782                     | 65      | 65      | 65      | 65      |
| Emulsion, Time to 37 mL Water, 82 C, min, ASTM D1401              | 30      | 30      | 30      | 30      |
| FZG Scuffing, A/16.6/90, Fail Stage, Rating, DIN 51354 (mod)      |         | 12+     | 12+     | 12+     |
| FZG Scuffing, A/8.3/90, Fail Stage, Rating, DIN 51354             | 12+     | 12+     |         | 12+     |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1              |         |         | 12+     |         |
| Flash Point, Cleveland Open Cup, °C, ASTM D92                     | 230     | 240     | 240     | 240     |
| Four-Ball Extreme Pressure Test, Load Wear Index, kgf, ASTM D2783 | 47      | 48      | 48      | 48      |
| Four-Ball Extreme Pressure Test, Weld Load, kgf, ASTM D2783       | 200     | 250     | 250     | 250     |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445                     | 14.7    | 19      | 24.1    | 30.6    |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445                      | 150     | 220     | 320     | 460     |
| Pour Point, °C, ASTM D97  | -24     | -24     | -24     | -15     |
| Rust Characteristics, Procedure B, ASTM D665                      | PASS    | PASS    | PASS    | PASS    |
| Viscosity Index, ASTM D2270                                       | 97      | 97      | 97      | 96      |

Health and Safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ <http://www.msds.exxonmobil.com/psims/psims.as>  
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Typical Properties are typical of those obtained with normal production tolerance and do not constitute a specification. Variations that do not affect product performance are to be expected during normal manufacture and at different blending locations. The information contained herein is subject to change without notice. All products may not be available locally. For more information, contact your local ExxonMobil contact or visit [www.exxonmobil.com](http://www.exxonmobil.com)  
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