Product Data

# Tribol™ GR 4020 PD Range

High performance bearing grease

## Description

Castrol Tribol™ GR 4020 PD Range (previously called Tribol™ 4020 Range )greases are formulated from highly refined petroleum base oils, a lithium complex thickener, and Tribol Grease Oil Additive (TGOA), the latest advancement in the field of friction reducing and surface improving additive technology. These multi-service greases are designed to extend the service life of bearings in heavy duty and elevated temperature applications. The load-carrying, anti-wear, and friction reducing capabilities of Tribol GR 4020 PD greases exceed conventional complex greases due to the advanced TGOA additive technology. Under relatively high specific loads and related temperatures, this technology promotes a non-destructive smoothing of surface roughness in the micro-range.
This smoothing effect reduces friction and leads to an increase of the actual load-bearing surface. If surface roughness peaks redevelop because of shock loads or stop-and-go operation, the TGOA additive package automatically reactivates.
Surface roughness is again smoothed and lubrication optimised.

## Application

Tribol GR 4020 PD greases were formulated as multi-service lubricants for heavy duty applications of plain and anti-friction bearings under medium to high loads. The TGOA additives are very effective in protecting the machined surfaces of bearings during the critical ‘running-in’ period. Good bearing surfaces are essential for long bearing life. Tribol GR 4020 PD is commonly used as a plant wide lubricant in the automotive industry as well as industries where the preference is for a high performance non-dark grease.

## Advantages

- Advanced TGOA additive technology – multiple benefits including reduced friction, temperatures and noise, increased load carrying ability, and superior surface protection
- Excellent water resistance – the coating film stays on the surface even in the presence of water
- Excellent mechanical stability and adhesion – the grease keeps its consistency in service ensuring long term protection and reduced consumption as film stays between lubricated surfaces
- Superior oxidation resistance – prevents corrosive activity on bearings in aggressive environments
- Formulated to address environmental concerns – it is free of antimony, barium, lead, and zinc

## Typical Characteristics

| Name | Method | Units | GR 220-1 PD | GR 220-2 PD | GR 460-1 PD | GR 460-2 PD |
|---|---|---|---|---|---|---|
| Appearance | Visual | - | Light amber | | Amber | |
| Thickener type | - | - | Lithium complex | | | |
| Base oil | - | - | Mineral oil | | | |
| Consistency | ASTM D217 / ISO 2137 | NLGI Grade | 1 | 2 | 1 | 2 |
| Density @ 20°C / 68°F | IP 530 | kg/m³ | 915 | 915 | 915 | 915 |
| Worked Penetration (60 strokes @ 25°C / 77°F) | ASTM D217 / ISO 2137 | 0.1 mm | 310 - 340 | 265 - 295 | 310 - 340 | 265 - 295 |
| Dropping Point | ASTM D566 / ISO 2176 | °C/°F | 240/464 | 240/464 | 240/464 | 240/464 |
| Base Oil Viscosity @ 40°C / 104°F | ASTM D 445 / ISO 3104 | mm²/s | 220 | 220 | 460 | 460 |
| Base Oil Viscosity @ 100°C / 212°F | ASTM D 445 / ISO 3104 | mm²/s | 19 | 19 | 28.5 | 28.5 |
| Flash Point - open cup method | ASTM D92 / ISO 2592 | °C/°F | 225 / 437 | 225 / 437 | 232 / 450 | 232 / 450 |
| Rust Test - distilled water (24hrs) | ASTM D1743 | Rating | Pass | Pass | Pass | Pass |
| Rust test - Emcor - distilled water | ASTM D6138 / ISO 11007 | Rating | ≤0/1 | ≤0/1 | ≤0/1 | ≤0/1 |
| Copper Corrosion (24 hrs,100°C / 212°F) | ASTM D4048 | Rating | 1b | 1b | 1b | 1b |
| Four Ball Wear test - Wear Scar Diameter (40 kgf / 75°C / 1200 rpm / 1 hr) | ASTM D2266 | mm | 0.5 | 0.5 | 0.5 | 0.5 |
| Four Ball Weld Load test - Weld Point | ASTM D2596 | kgf | 400 | 400 | 400 | 400 |
| Four Ball Wear test - Wear Scar Diameter | DIN 51350-5E | mm | 0.7 | 0.7 | 0.7 | 0.7 |
| Four Ball Wear test - Weld Load | DIN 51350-4 | N | 4200 / 4400 | 4200 / 4400 | 4200 / 4400 | 4200 / 4400 |
| SRV Friction and Wear test (300 N / 2 hr / 50ºC) | ASTM D5707 | coeff. of friction | 0.08 | 0.08 | 0.08 | 0.08 |

| | | | | | | |
|---|---|---|---|---|---|---|
| FE-9 Bearing Life test - B/1500/ 6000-140 | DIN 51821-2 | Pass | >100 | >100 | >100 | >100 |
| Water Wash-out @ 79ºC/175ºF | ASTM D1264 / ISO 11009 | %wt loss | 4 | 2 | 4 | 2 |
| Water Resistance | DIN 51807-1 | Rating | 1 | 1 | 1 | 1 |
| Roll Stability test - Shear Stability | ASTM D1831 | Delta % | 10 | 10 | 10 | 10 |
| Flow pressure @ -20°C / -4°F | DIN 51805 | hPa | 600 | 1000 | 1000 | 1400 |
| Oxidation Stability | ASTM D942 | PSI | 8 | 3 | 6 | 3 |
| DIN Classification | DIN 51502 | - | KP 1 N-20 | KP 2 N-20 | KP 1 N-20 | KP 2 N-20 |
| ISO Classification | ISO 6743/9 | - | L-XBDHB-1 | L-XBDHB-2 | L-XBDHB-1 | L-XBDHB-2 |

Subject to usual manufacturing tolerances.

## Additional Information

In order to minimise potential incompatibilities when converting to a new grease, all previous lubricant should be removed as much as possible prior to operation. During initial operation, re-lubrication intervals should be monitored closely to ensure all previous lubricant is purged.

**This product was previously called Tribol 4020 Range. The name was changed in 2015.**


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