

INDUSTRIAL GEAR OIL SERIES:

Industrial Gear Oil Series are extra high performance gear oils having outstanding extreme pressure characteristics and load-carrying properties, intended for use in all types of enclosed gear drives with circulation or splash lubrication systems. Industrial Gear Oil Series is designed to stay ahead of the changing needs of gearbox technology. Gearbox technology design trends are towards smaller units with similar power throughput. This increase in power density places increased demands on gear oils. Industrial Gear Oil Series oils are formulated to meet the stress by providing extra protection for gears, bearings and seals.

Industrial Gear Oil Series products are a leading member of industrial lubricants that enjoy a reputation for innovation and high performance capability. These mineral-based products are designed to provide high quality industrial gear oils, meeting the latest industry standards and with high versatility to lubricate a broad range of industrial and marine equipment.

Specifications and Approvals:

| This product meets or exceeds the requirements of: | 68 | 100 | 150 | 220 | 320 | 460 | 680 |
|--|----|-----|-----|-----|-----|-----|-----|
| AGMA 9005-F16 | X | X | X | X | X | X | X |
| China GB 5903-2011, L-CKC | X | X | X | X | X | X | X |
| China GB 5903-2011, L-CKD | X | X | X | X | X | X | X |
| DIN 51517-3:2018-09 | X | X | X | X | X | X | X |
| ISO L-CKC (ISO 12925-1:2018) | X | X | X | X | X | X | X |
| ISO L-CKD (ISO 12925-1:2018) | X | X | X | X | X | X | X |

Properties and Specifications:

| Property | 68 | 100 | 150 | 220 | 320 | 460 | 680 |
|---|--------|---------|---------|---------|---------|---------|---------|
| Grade | ISO 68 | ISO 100 | ISO 150 | ISO 150 | ISO 220 | ISO 460 | ISO 680 |
| Viscosity Index, ASTM D2270 | 103 | 96 | 96 | 96 | 96 | 97 | 90 |
| Rust Characteristics, Procedure B, ASTM D665 | PASS | PASS | PASS | PASS | PASS | PASS | PASS |
| Density @ 15.6 C, kg/l, ASTM D4052 | 0,880 | 0,880 | 0,890 | 0,890 | 0,900 | 0,900 | 0,900 |
| FE8 wear test, V50 roller wear, mg, DIN 51819-3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1 | 12+ | 12+ | 12+ | 12+ | 12+ | 12+ | 12+ |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 230 | 230 | 230 | 240 | 240 | 240 | 250 |
| Foam, Sequence I, Tendency/Stability, ml, ASTM D892 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 | 0/0 |
| Foam, Sequence II, Tendency/Stability, ml, ASTM D892 | 30/0 | 30/0 | 30/0 | 30/0 | 30/0 | 30/0 | 30/0 |
| Four-Ball Extreme Pressure Test, Load Wear Index, kgf, ASTM D2783 | 45 | 45 | 45 | 47 | 47 | 47 | 47 |
| Pour Point, °C, ASTM D97 | -25 | -24 | -24 | -23 | -24 | -15 | -10 |
| Kinematic Viscosity @ 40 C, mm ² /s, ASTM D445 | 68 | 100 | 150 | 220 | 320 | 460 | 680 |
| Kinematic Viscosity @ 100 C, mm ² /s, ASTM D445 | 8,7 | 11,4 | 14,6 | 19,3 | 24,2 | 30,4 | 39,3 |