

# Industrial Gear Oil K21M 680

**Bardahl Special Blend K21M** is a specially developed industrial oil with specific properties and an extra high viscosity. This oil contains Bardahl's 'polar attraction', the formula that ensures that the oil can handle very high pressures and therefore ensures less friction and wear of the lubricated parts. Special additives also ensure that the oil does not foam at high speeds and rising temperatures.

## The problem

Friction between machine parts takes more energy, ensures high temperatures and causes extra friction and wear. Heavy loads such as continuous use, high speeds and unfavorable environmental conditions increase this effect and ensure higher maintenance costs and longer downtime of machine or vehicle.

Industrial machines are often heavily loaded at high speeds, which causes the increasingly warmer oil to form foam. This heat and foam reduce the lubricating capacity of the oil. This reduction in the lubricating capacity automatically leads to increased friction and therefore wear. A special anti-foam addition prevents foaming and ensures that the oil lubricates well even at high speeds. Bardahl's polar attraction formula ensures that old precipitations are removed and forms a lubricating film, which can tolerate pressures and temperatures, many times higher than those of ordinary oils.

**Bardahl Special Blend K21M** also contains multiple corrosion retardant components, which function as a barrier against corrosion and oxidation.

## Specifications

AGMA - 9005-E02 | AISE - 224 | DAVID BROWN - S1.53.101E | DIN - 51517 CLP | ISO - 680

### Analysis data

| Test                |           |                     | Results |
|---------------------|-----------|---------------------|---------|
| Category            | Method    | Unit                | 680     |
| Density at 15°C     | D 4052    | kg / m <sup>3</sup> | 925     |
| Viscosity at 40°C   | D 445     | Cst                 | 650     |
| Viscosity at 100 °C | D 445     | Cst                 | 36      |
| Viscosity index     | D 2270    |                     | 88      |
| pourpoint           | D 97      | °C                  | -9      |
| Flashpoint COC      | D 92      | °C                  | 262     |
| ASF A/16,6/140      | DIN 51354 | Level               | 12      |

### Analyticaldata viscosities 32 to 150

| Test                |           |                     | Result |     |     |      |      |
|---------------------|-----------|---------------------|--------|-----|-----|------|------|
| Category            | Method    | Unit                | 32     | 46  | 68  | 100  | 150  |
| Density at 15°C     | D 4052    | kg / m <sup>3</sup> | 885    | 880 | 885 | 890  | 892  |
| Viscosity at 40°C   | D 445     | Cst                 | 34     | 44  | 65  | 98   | 147  |
| Viscosity at 100 °C | D 445     | Cst                 | 6.1    | 6,6 | 8,5 | 11,1 | 14,6 |
| Viscosity index     | D 2270    |                     | 100    | 100 | 100 | 96   | 95   |
| pourpoint           | D 97      | °C                  | -27    | -27 | -24 | -24  | -24  |
| Flashpoint COC      | D 92      | °C                  | 225    | 224 | 225 | 235  | 240  |
| ASF A/16,6/140      | DIN 51354 | Level               | 12     | 12  | 12  | 12   | 12   |

**Analytical data viscosities 220 to 1000**

| Test   |            |                     | Result |      |      |     |      |
|--|------------|---------------------|--------|------|------|-----|------|
| Category   | Method     | Unit                | 220    | 320  | 460  | 680 | 1000 |
| Density at 15°C  | D 4052     | kg / m <sup>3</sup> | 900    | 905  | 910  | 925 |      |
| Viscosity at 40°C  | D 445      | Cst                 | 222    | 319  | 456  | 650 | 978  |
| Viscosity at 100 °C  | D 445      | Cst                 | 18,8   | 23,6 | 30,0 | 36  | 51.2 |
| Viscosity index  | D 2270     |                     | 98     | 98   | 98   | 88  | 98   |
| pourpoint  | D 97       | °C                  | -21    | -21  | -18  | -9  | -2   |
| Flashpoint COC   | D 92       | °C                  | 245    | 255  | 260  | 262 | 265  |
| ASF A/16,6/140   | DIN 51354  | Level               | 12     | 12   | 12   | 12  | 12   |
| 4 Ball EP Test ; LWI*/kg   | astmd2783  |                     | 53.7   |      |      |     |      |
| Weld Point,kg:   |            |                     | 250    |      |      |     |      |
| 4 Ball Wear Test ;20 kg/1800 rpm/75°C for 1 hr,mean wear scar diameter,mm: | ASTM D2266 |                     | 0.29   |      |      |     |      |
| Timken OK Load .lb:  | ASTM D2782 |                     | 70     |      |      |     |      |
| FZG 4 Square Gear Test,load stage : 12 pass                                | DIN 51534  |                     | 16.7   |      |      |     |      |
| Total weight loss,mg:  |            |                     |        |      |      |     |      |

\*LWI-load wear index

All viscosities described above available on request.

**Industrial Gear Oil K21M 680**

**Article number** 75155-680

**Contents** 5 liter

**Article number** 75182-680

**Contents** 25 litres

**Article number** 75186-680

**Contents** 60 litres

**Article number** 75192-680

**Contents** 210 litres