



## Product Application Sheet

# 76 Extra Duty Gear Lube

### PREMIUM EXTREME PRESSURE INDUSTRIAL GEAR LUBRICANT

*76 Extra Duty Gear Lube is an extreme pressure industrial gear lubricant as defined by the American Gear Manufacturers Association (AGMA). It is formulated with a thermally stable, lead-free, non-corrosive sulfur-phosphorus EP additive package designed to minimize wear in enclosed industrial gear sets with heavy tooth loads, high peak loads, or intermittent shock loads. It may also be used in other equipment and applications where extreme pressure lubricants are specified. This product is available in viscosity grades meeting AGMA Specifications 2EP through 9EP.*

#### TYPICAL APPLICATIONS

Enclosed industrial gear sets with heavy tooth loads, high peak loads, or intermittent shock loads.

Enclosed industrial gear sets in which operation approaches design capacity due to equipment modification, peak load increases, or stepped-up power requirements.

Plain and rolling element bearings where loads are heavy, particularly where high peak or shock loads are encountered.

Gear drives and pinion stands in metal rolling mills, cement mills, and paper mills.

Construction, excavation, and mining equipment.

Chain drives, sprockets, plain and rolling element bearings, slide guides, and flexible couplings.

**CAUTION:** *76 Extra Duty Gear Lube is recommended for use where operating temperatures normally do not exceed 225°F. It is not recommended for use in automotive hypoid gears specifying an API GL-5 gear lubricant such as 76 MP Gear Lube.*

#### RECOMMENDED FOR:

AGMA 9005-D94 Grades 2EP through 9EP  
Cincinnati Machine P-35 (7EP), P-59 (6EP),  
P-63 (2EP), P-74 (5EP) & P-77 (4EP)  
David Brown S1.53.101  
DIN 51517 Part 3 Antiwear Circulating Oils  
U.S. Steel 224 Heavy-Duty Lead-Free EP  
Gear Oil

#### OUTSTANDING FEATURES

- ◆ Outstanding thermal stability to minimize oxidative sludge and varnish formation
- ◆ Excellent load-carrying capacity
- ◆ Excellent protection against scuffing and wear
- ◆ Excellent demulsibility for rapid water separation
- ◆ Good oiliness characteristics to reduce friction, lower operating temperatures, and reduce power consumption
- ◆ Good rust and corrosion protection
- ◆ Non-corrosive to bronze or brass at normal operating temperatures (below 225°F)
- ◆ Good foam resistance
- ◆ Available in a wide range of viscosity grades

## DESCRIPTION

76 Extra Duty Gear Lube is formulated with high quality paraffinic base oils and a carefully balanced package of lead-free additives. The sulfur-phosphorus EP additive package provides excellent load-carrying capacity to protect gear teeth against scuffing and to provide a margin of safety during high peak or shock loads. It also provides excellent antiwear characteristics to help extend gear and bearing life. It cannot, however, overcome excessive loading, misalignment, inadequate mechanical design, or metallurgy defects.

76 Extra Duty Gear Lube is thermally stable. It resists oxidation and deposit formation at temperatures not tolerated by previous-generation products. It is non-corrosive to steel or bronze under normal operating conditions. It has superior water separating characteristics to reduce the risk of water reaching gears and bearings, and is inhibited to provide good foam resistance. This product has excellent oiliness characteristics which help to reduce friction, lower operating temperatures, and reduce power consumption.

### TYPICAL INSPECTION TESTS:

|   |       |       |       |       |       |       |       |        |
|---|-------|-------|-------|-------|-------|-------|-------|--------|
| Grade, AGMA <sup>(a)</sup> .....        | 2EP   | 3EP   | 4EP   | 5EP   | 6EP   | 7EP   | 8EP   | 9EP    |
| Grade, ISO .....                        | 68    | 100   | 150   | 220   | 320   | 460   | 680   | ~ 1500 |
| Product Code .....                      | 52460 | 52530 | 52470 | 52480 | 52490 | 52500 | 52510 | 52520  |
| Density, g/cm <sup>3</sup> @ 15°C ..... | 0.873 | 0.872 | 0.881 | 0.888 | 0.894 | 0.899 | 0.917 | 0.921  |
| Color, ASTM .....                       | 1.0   | 1.5   | 2.0   | 3.0   | 3.5   | 5.5   | D 8.0 | D 8.0  |
| Flash Point, COC, °C .....              | 230   | 228   | 240   | 241   | 250   | 246   | 260   | 238    |
| °F .....                                | 445   | 440   | 465   | 465   | 480   | 475   | 500   | 460    |
| Pour Point, °C .....                    | -18   | -12   | -15   | -15   | -12   | -9    | -6    | -9     |
| °F .....                                | 0     | 10    | 5     | 5     | 10    | 16    | 21    | 16     |
| Viscosity                               |       |       |       |       |       |       |       |        |
| cSt @ 40°C .....                        | 66.4  | 100   | 145   | 210   | 311   | 470   | 680   | 1,313  |
| cSt @ 100°C .....                       | 8.9   | 12.6  | 14.4  | 18.8  | 23.9  | 30.9  | 36.7  | 53.5   |
| SUS @ 100°F .....                       | 343   | 517   | 761   | 1,108 | 1,654 | 2,521 | 3,689 | 7,234  |
| SUS @ 210°F .....                       | 56.2  | 70.0  | 77.3  | 95.9  | 119   | 151   | 179   | 261    |
| Viscosity Index .....                   | 107   | 103   | 99    | 99    | 97    | 95    | 85    | 85     |
| Copper Corrosion, ASTM D130 .....       | 1A    | 1A    | 1A    | 1A    | 1A    | 1A    | 1A    | 1B     |
| Demulsibility, ASTM D2711,              |       |       |       |       |       |       |       |        |
| Emulsion, ml .....                      | 0.1   | 0.1   | 0.1   | 0.1   | 0.2   | 0.2   | ----  | ----   |
| Free Water, ml .....                    | 88    | 85    | 87    | 86    | 86    | 81    | ----  | ----   |
| Dry Air Oxidation, 13 days @ 121°C,     |       |       |       |       |       |       |       |        |
| Precipitate .....                       | 0.00  | ----  | ----  | 0.00  | ----  | ----  | 0.00  | ----   |
| Tube Condition .....                    | Clean | ----  | ----  | Clean | ----  | ----  | Clean | ----   |
| Foam Test, ASTM D892 .....              | Pass  | Pass  | Pass  | Pass  | Pass  | Pass  | Pass  | Pass   |
| FZG Load Test, Pass Stage .....         | 12    | 12    | 12    | 12    | 12    | 12    | 12    | ----   |
| Rust Test, ASTM D665A & B .....         | Pass  | Pass  | Pass  | Pass  | Pass  | Pass  | Pass  | Pass   |
| Timken OK Load, lb .....                | 65    | 65    | 65    | 65    | 65    | 65    | 60    | 55     |
| 4-Ball Wear, 600 rpm, 1 hr, mm .....    | 0.25  | 0.25  | 0.25  | 0.25  | 0.25  | 0.25  | 0.26  | ----   |
| 4-Ball Weld Point, kg .....             | ----  | ----  | ----  | 250   | ----  | ----  | 315   | ----   |
| 4-Ball Load Wear Index .....            | ----  | ----  | ----  | 54    | ----  | ----  | 56    | ----   |

<sup>(a)</sup> **Note:** Check for local availability; not all viscosity grades are available at all terminals.