

## **GRS-460-F Synthetic Grease** **“Food Grade Applications”**

### **GENERAL**

GRS-460-F is part of a family of new high performance synthetic lubricants especially designed to meet the requirements of the food industry. For the first time, a truly high performance grease is available for applications with indirect food contact.

The growing trend to extend intervals between lubrication and the increasing use of sealed-for-life bearings impose increasingly stringent demands on grease performance. Service under temperature extremes, shock loading, vibration, and water wash conditions add to these demands. GRS-460-F Synthetic Grease is compounded with a polyalphaolefin (PAO) base fluid to provide extended service life and wide temperature range capability. Coupled with a high performance additive package, this new product is a real multi-purpose lubricant which can effectively handle a wide range of applications.

Authorized by USDA for use in Federally inspected meat and poultry plants.

Complies with FDA 21 CFR 178.3570 – Lubricants with Incidental Food Contact.

### **FEATURES**

Several outstanding performance features of GRS-460-F Synthetic Grease are:

- \* Wide operating temperature range
- \* Excellent low temperature torque characteristics, as low as -54°C (-65°F) soft and serviceable to -62°C (-80°F)
- \* Very high dropping point of 274°C (526°F)
- \* Long bearing life at elevated temperatures and high speeds, provides long term lubrication at 204°C (400°F)

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- \* Exceptionally good resistance to oxidation and water washout
- \* Very good extreme pressure and antiwear properties
- \* Consistency maintained under extensive shearing
- \*The polyalphaolefin base fluid in this product is similar to mineral oils. Therefore, seal materials compatible with conventional petroleum products are also compatible with GRS-460-F Synthetic Grease.

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APPLICATIONS

Because of its truly multi-service capabilities, GRS-460-F "Food Grade" Synthetic Grease is suitable for lubrication of most anti-friction bearings over a wide range of temperatures and speeds where long retention, oxidation stability and resistance to the washing effects of water are necessary. This grease is also recommended for splines, screws, grease-lubricated worm gears and other mechanisms featuring steel-to-steel or steel-to-bronze surfaces. Additionally, it is recommended in bearing situations where oscillatory motion and vibration create problems.

**TYPICAL PROPERTIES**

Dropping Point, °F (°C) .....	526(274)
NLGI Number .....	1.2
Penetration ASTM D217	
Unworked .....	315
Worked 60 Strokes .....	326
Worked 100,000 Strokes .....	385
Color, Visual .....	Tan

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Copper corrosion, FTMS 791-5309

24h ,100°C: Corrosin ..... None

Rust Prevention, D1743 ..... 1-1-1

Oil Separation, FTMS 791-321

30h, 177°C(350°F):%..... 7.05

Evaporation, D2595, 22h., 177°C:% ..... 4.4

Leakage Tendencies, D1263(Mod.) 24h.,121°C(250° )

Deposit on bearing surface..... None

Leakage to hub:g ..... 0.5

Leakage to collector:g ..... 1.0

Total Leakage:g ..... 1.5

Roll Stability,D1831

Penetration Before 315

Penetration After 325

Consistency Change: Points ..... +10

Water Washout ASTM D1264 Grease loss

37.8°C(100°F):%..... 0

79.4°C(175°F):%..... 0

Wear Test, 4-Ball,D2266

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Avg. Scar Diameter:mm ..... 0.62

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E.P. Test, 4-Ball, D2596

L.W.I. .... 50

Weld Point: Kg ..... 250

High Temperature Performance, FTMS 931-333

Pope Spindle, 10,000 RPM,

Size 204 Brg.,177°C:h ..... +700 hours

Low Temperature Torque, D1478-54°C(-65°F)

starting: g-cm ..... 1268

running (1h): g-cm ..... 228

U.S.Steel Mobility Test

No. 1 capillary, 150 psi Flow: g/s

25°C(77°F)..... 50.2

-17.8(0.4)..... 1.76

-28.9(-20.2)..... 0.40

-40.0(-40)..... 0.081

-45.9(-45)..... 0.064

-53.9(-65.2)..... 0.039

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-62.2(-79.6)..... Nil

Timken E.P. Test, D2509

O.K. Load: pounds ..... 40

Oxidation Stability, D942

Pressure drop: kPa

100 h .....	2.5
200 .....	5.0
300 .....	5.0
400 .....	12.5
500 .....	17.5

**Base Oil Properties**

Viscosity, Kin:37.8°C(100°F)cSt ..... 33.87

98.9°C(210°F)cSt ..... 6.0

Viscosity, SUV: 37.8°C ..... 158.6

98.9°C ..... 46.0

Viscosity Index ..... 137

Pour Point °C(°F) ..... -68(-90)

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