

# Product Information



## Duolec® Syn Gear Lubricant (9815-9868)

### *High-Performance Synthetic Oil Provides Reliable, Long-Lasting Protection for Heavily Loaded Gearboxes*

Duolec® Syn Gear Lubricant is formulated with 100 percent synthetic base fluid to ensure excellent high- and low-temperature performance. The synthetic base fluid also provides oxidation stability, which contributes to long lubricant life and a reduction in costly lubricant changeovers.

Duolec Syn Gear Lubricant provides uninterrupted operation and long service life for expensive gear applications, including heavily loaded gearboxes that are exposed to temperature extremes. With its special blend of clean gear technology additives, Duolec Syn Gear Lubricant works to prevent deposit formations in high-temperature applications and will not break down over time. The lubricant also provides exceptional low-temperature flow properties, protecting gears during the coldest startups.

Featuring Duolec®, LE's proprietary additive that reduces friction and increases oil film strength, Duolec Syn Gear Lubricant is able to withstand incredible loads and stresses from heavy-duty applications such as pulverizer gear units.



### **Beneficial Qualities**

#### *Provides Reliable, Long-Lasting Protection*

- Protects costly gears & other assets
  - ◆ Ensures uninterrupted operation
  - ◆ Promotes long service life for equipment
- Reduces friction
  - ◆ Protects against wear
  - ◆ Prevents micropitting or "gray-staining"
- Maintains high film strength
  - ◆ Provides extreme pressure (EP) protection
- Will not break down over time
- Can be filtered down to 3 microns with microglass filters without affecting performance
- Reduces need for costly lube changes
- Resists foaming

#### *Withstands Extreme Conditions*

- Provides oxidation stability for long lubricant life
- Prevents deposit formation in high temps
- Exhibits exceptional low-temp flow properties
- Can be used for heavily loaded gearboxes

### **Proprietary Additive**

LE's proprietary additives are used exclusively in LE lubricants. Duolec® Syn Gear Lubricant contains Duolec.

**Duolec®** dual-acting additive imparts synergistic properties to lubricants, providing both wear-reducing and extreme pressure protection. The result of revolutionary technology designed specifically for use in LE gear lubricants, Duolec increases oil film strength and is temperature-activated to provide a protective layer that smooths metal surfaces and minimizes the effects of any contact, thereby reducing friction and preventing surface wear.





## Duolec® Syn Gear Lubricant

	<u>9815</u>	<u>9822</u>	<u>9832</u>	<u>9846</u>	<u>9868</u>
<b>Color</b>	Amber	Amber	Amber	Amber	Amber
<b>ISO VG</b>	150	220	320	460	680
<b>Relative Density @ 60°F/60°F, ASTM D1298</b>	0.858	0.859	0.862	0.869	0.870
<b>Viscosity @ 100°C, cSt, ASTM D445</b>	20.6	26.7	35.4	47.9	67.4
<b>Viscosity @ 40°C, cSt, ASTM D445</b>	156	227	324	472	717
<b>Viscosity Index ASTM D2270</b>	153	151	154	160	165
<b>Flash Point °C (°F) (COC), ASTM D92</b>	229 (445)	240 (464)	241 (465)	240 (464)	244 (471)
<b>Pour Point °C (°F), ASTM D97</b>	-37 (-34)	-37 (-34)	-33 (-27)	-29 (-20)	-24 (-11)
<b>Rust Test 4 hrs @ 60°C, DI H<sub>2</sub>O, ASTM D665A</b>	Pass	Pass	Pass	Pass	Pass
<b>Copper Corrosion 3 hrs @ 100°C, ASTM D130</b>	1b	1b	1b	1b	1b
<b>Timken OK Load lbs, ASTM D2782</b>	70	70	70	70	70
<b>Four-Ball EP Weld Point kgf, ASTM D2783</b>	250	400	400	400	400
<b>Four-Ball EP Load Wear Index kgf, ASTM D2783</b>	57.0	80.6	85.2	89.1	90.8
<b>Four-Ball Wear @ 75°C, 1,200 rpm, 40 kgf, 60 minutes, mm wear, ASTM D4172</b>	0.32	0.29	0.28	0.27	0.30
<b>Demulsibility Characteristics EP 82°C, 90 ml H<sub>2</sub>O, ASTM D2711B</b>					
% of H <sub>2</sub> O in oil	0.3	0.3	0.3	0.3	0.3
Total ml of free H <sub>2</sub> O	85	84	85	87	86
ml of emulsion	0	0	0	0	0
<b>Foaming Characteristics @ 24°C/93.5°C/24°C, 3 sequences, ml of foam/time to break, ASTM D892</b>	0/0;0/0;0/0	0/0;0/0;0/0	0/0;0/0;0/0	0/0;0/0;0/0	0/0;0/0;0/0
<b>FZG Scuffing Load Capacity Fail Stage, A/8.3/90, ISO 14635-1</b>	12+	14+	14+	14+	14+

### Performance Requirements Met or Exceeded

- AGMA 9005-F16
- AIST 224 (US Steel 224)
- DIN 51517-3 CLP
- Flender Industrial Gear
- GM LS-2
- ISO 12925-1 CKSMP
- USDA H2

### Typical Applications

- Pulverizer units
- Other heavily loaded gearboxes that are exposed to temperature extremes