



## Synthetic Gear Oil

### PRODUCT DESCRIPTION

Bel-Ray® Synthetic Gear Oil, an enclosed Extreme Pressure (EP) gear lubricant, is a full synthetic hydrocarbon and ester formulation. It offers outstanding Extreme Pressure and anti-wear properties, as well as excellent viscosity-temperature properties, and extremely low coefficients of friction and traction. Bel-Ray Synthetic Gear Oil is compatible with mineral oils.

### PRODUCT FEATURES and BENEFITS

- Premium synthetic base fluids (Polyalphaolefin [PAO] and esters) provide enhanced lubricity, that reduces friction, heat generation, and parasitic loss.
- Superior Extreme Pressure and anti-wear properties greatly reduce wear and gear tooth damage due to extreme pressure boundary lubrication conditions
- Exceptional FZG micropitting test results prevent low-cycle tooth surface damage (micropitting or gray staining) that can lead to catastrophic gear damage.
- Highly filterable that allows easy removal of particulates from the lubricant, promoting less abrasive wear and longer component life.
- Excellent low temperature performance and flow, ideal for cold environments.

### APPLICATIONS

Recommended as a lubricant and sealant for slick lines, and braided wirelines and cables.

- Dragline, shovel and heavy process gear cases
- Planetary gear transmissions
- Electric wheel motors
- Compliances: U.S. Steel 224, AGMA 9005-E02, DIN 51517 Part 3

ISO Viscosity Grade	220	320	460	680	1000
Bosch Rexroth	X	X	X		
Caterpillar (Bucyrus)	X	X	X		X
General Electric				X	
LeTourneau			X		
Liebherr		X		X	
Siemens (Flender)	X	X	X	X	

# TECHNICAL DATA SHEET



## PRODUCT DATA

Typical Properties						
Property	Test Method	220	320	460	680	1000
ISO Viscosity Grade		220	320	460	680	1000
AGMA Number		5	6	7	8	8A
Viscosity @ 40°C (cSt)	ASTM D445	220	320	460	680	1000
Viscosity @ 100°C (cSt)	ASTM D445	219	317	468	692	927
Viscosity Index	ASTM D2270	163	165	167	170	201
Pour Point, °C (°F)	ASTM D97	-48 (-54)	-46 (-51)	-48 (-54)	-42 (-44)	-37 (-35)
Copper Corrosion, 3 h @ 100°C (Rating)	ASTM D130	1b	1b	1b	1b	1b
Rust Prevention	ASTM D665A&B	Pass	Pass	Pass	Pass	Pass
4-Ball Wear Test, @ 1200 rpm, 40 kgf, 60 min, 75°C Scar Diameter (mm)	ASTM D4172	0.30	0.31	0.33	0.31	0.32
Timken EP Test, OK Load (lbs)	ASTM D2782	45.4 (100)	45.4 (100)	45.4 (100)	45.4 (100)	45.4 (100)
FZG Micropitting Test, Fail Stage	FVA 54	10	>10	>10	>10	N/A
Endurance Test, GFT-Class		High	High	High	High	
FZG Scuffing Load Test, A/16.6/90 and A/8.3/90 Fail Stage	DIN 51534	>14	>14	>14	>14	N/A
Bearing Wear, FAG FE8						
Weight Loss, Roller (mg)	DIN 51819-3	4	4	4	4	N/A
Weight Loss, Cage (mg)		28.5	28.5	28.5	28.5	
Color		Yellow	Yellow	Yellow	Yellow	Yellow

## HEALTH and SAFETY

Health and safety recommendations for products can be found on the Safety Data Sheet (SDS) at [www.belray.com](http://www.belray.com)

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