



Industrial Gear Oil

PRODUCT DESCRIPTION

Bel-Ray® Industrial Gear Oils are high quality extreme pressure (EP) lubricants formulated to provide optimum performance and protection for gearboxes in industrial applications. These lubricants are blended with thermally stable mineral base oils and fortified with additive technology to deliver protection against wear in heavily loaded gears and bearings, rust and corrosion, oxidation, and the adverse effects of water contamination. Bel-Ray Industrial Gear Oils are designed to extend equipment life and maintain reliable operation in harsh environments, including modern gearboxes with reduced sump volumes and high-power density applications.

PRODUCT FEATURES and BENEFITS

- Advanced extreme pressure (EP) technology forms a durable protective film on gear and bearing surfaces to provide excellent load-carrying capacity, protect against micropitting, and support efficient power transmission by reducing friction.
- Outstanding anti-wear performance and corrosion inhibitors protect critical gear components from wear, rust, and corrosion to improve reliability and extend equipment life in harsh operating environments.
- Excellent demulsibility promotes rapid water separation to maintain lubricant performance in the presence of water contamination, while foam resistance provides effective foam control in systems with low oil residence times.
- Superior oxidation resistance and thermal stability provide protection against high-temperature degradation and minimize deposit formation to extend lubricant life in demanding environments, including modern high-power density gearboxes with reduced sump volumes.
- The balanced formulation is non-corrosive to copper and bronze bearing materials and is compatible with common seal materials to reduce leakage and prevent contamination.
- Excellent low-temperature characteristics enable efficient oil flow and lubrication of gears and bearings, minimizing wear during cold starts and low-temperature operation.

APPLICATIONS

Bel-Ray Industrial Gear Oils are recommended for the lubrication of enclosed gears with splash, circulating, or mist systems where an AGMA extreme pressure (EP) lubricant is specified. These lubricants are also suitable for a broad range of industrial equipment, including slow-speed, highly loaded plain and rolling element bearings.



SPECIFICATIONS and APPROVALS

	100	150	220	320	460	680
AGMA 9005-F16	●	●	●	●	●	●
AIST 224 (formerly U.S. Steel)	●	●	●	●	●	●
China GB 5903	● L-CKD	● L-CKD	● L-CKD	● L-CKD	● L-CKD	● L-CKC
David Brown S1.53.101 (SE)	●	●	●	●	●	●
DIN 51517-3 CLP	●	●	●	●	●	●
Fives Cincinnati	● P-76	● P-77	● P-74	● P-59	● P-35	● P-34
ISO L-CKC (ISO 12925-1)	●	●	●	●	●	●
ISO L-CKD (ISO 12925-1)	●	●	●	●	●	●
JIS K 2219:2006 (Class 2)	●	●	●	●	●	●

● - Recommended for use / meets requirements

PRODUCT DATA

Typical Properties							
Property	Test Method	100	150	220	320	460	680
Density @ 15°C (g/mL)	ASTM D4052	0.8791	0.8843	0.8881	0.8961	0.8974	0.8984
Viscosity @ 40°C (cSt)	ASTM D445	101	148	217	307	451	679
Viscosity @ 100°C (cSt)	ASTM D445	11.5	14.7	18.9	23.4	30.1	40.8
Viscosity Index	ASTM D2270	100	98	98	96	96	99
Flash Point, °C (°F)	ASTM D92	255 (492)	250 (482)	269 (516)	263 (506)	274 (526)	250 (482)
Pour Point, °C (°F)	ASTM D97	-31 (-24)	-30 (-22)	-27 (-17)	-26 (-15)	-24 (-11)	-19 (-2)
Copper Corrosion, 3 h @ 100°C (Rating)	ASTM D130	1b	1b	1b	1b	1b	1b
Rust Prevention	ASTM D665A&B	Pass	Pass	Pass	Pass	Pass	Pass
Foam, Sequence I, Tendency/Stability (mL/mL)	ASTM D892	10/0	10/0	0/0	10/0	10/0	10/0
Foam, Sequence II, Tendency/Stability (mL/mL)	ASTM D892	0/0	0/0	0/0	0/0	10/0	0/0
Foam, Sequence III, Tendency/Stability (mL/mL)	ASTM D892	0/0	0/0	10/0	0/0	0/0	10/0
Water Separability to 3 mL of Emulsion (min)	ASTM D1401	20	20	20	45	45	50
4-Ball Wear Test, Scar Diameter (mm)	ASTM D4172	0.41	0.41	0.42	0.43	0.39	0.36
4-Ball EP Test, Weld Load (kgf)	ASTM D2783	250	250	250	250	250	250
4-Ball EP Test, Load-Wear Index	ASTM D2783	54	54	53	55	54	54
FZG Scuffing, A/8.3/90, Failure Load Stage	ASTM D5182	>12	>12	>12	>12	>12	>12
Timken EP Test, OK Load (lbs)	ASTM D2782	70	70	70	70	70	70

HEALTH and SAFETY

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

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