



Product Bulletin

JMS EP INDUSTRIAL GEAR LUBRICANTS

BRAD PENN® JMS EP Industrial Gear Lubricants are emulsifiable EP (extreme pressure) industrial gear oils specially formulated to meet the performance requirements of Joy Technologies' specifications for transmission oils. They are formulated with high viscosity index *PENN-GRADE™* paraffinic base oils and a superior sulfur-phosphorous EP additive system.

BRAD PENN® JMS EP Industrial Gear Lubricants offer excellent emulsibility by forming stable emulsions when exposed to water. Their effective emulsibility, combined with a metal deactivator additive, helps prevent rust and corrosion of both ferrous and non-ferrous metals. The EP additive system provides high film-strength characteristics to protect gear teeth from wear and premature failure. They offer outstanding thermal and oxidative stability to protect against severe operating conditions such as intermittent shock loads, high peak loads, and heavy tooth loads. These EP Industrial Gear Lubricants provide the following benefits:

- Excellent performance in the presence of water
- Low pour points for enhanced low temperature performance
- Rust and corrosion protection
- Superior resistance to oxidation
- Outstanding anti-foam protection
- High film strength for a thick film on gearbox components

BRAD PENN® JMS EP Industrial Gear Lubricants are designed specifically to meet the performance requirements of Joy Technologies' specifications for transmission oils: TO-HEP (ISO 320) and TO-HD (ISO 460). They are recommended for use in gear boxes that are subject to heavy loading and water contamination. Typical applications include mining equipment, heavy duty off-road construction equipment, and severe industrial applications. They can be used anywhere a water-emulsifiable, extreme-pressure industrial gear lubricant is specified.



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BRAD PENN[®]
JMS EP Industrial Gear Lubricants – Typical Properties

ISO Viscosity Grade		320	460
AGMA Grade	Test Method	6 EP	7 EP
API Gravity, 60°F	ASTM D-1298A	27.1	26.7
Density, lbs/gal (g/L)	Calculated	7.43 (890)	7.45 (893)
Viscosity, cSt @ 40°C	ASTM D-445	320	460
Viscosity, cSt @ 100°C	ASTM D-445	25.4	33.0
Viscosity, SUS @ 100°F	ASTM D-2161	1800	2300
Viscosity, SUS @ 210°F	ASTM D-2161	125	160
Viscosity Index,	ASTM D-2270	103	103
Pour Point, °F (°C) (max)	ASTM D-5949	0 (-18)	0 (-18)
Flash Point, COC, °F (°C)	ASTM D-92	450 (232)	460(238)
Color	ASTM D-1500	L 8.0	L 8.0
Karl Fischer Moisture, ppm (max)	ASTM D-6304	500	100
Water Separability: 40 mL OIL + 4 mL WATER, 30 MIN. @ 180°F	ASTM D-1401	0mL (max)	0mL (max)
Sulfur Content, mass %	ASTM D-4294	0.482	0.484
Joy Transmission Specification		TO-HEP	TO-HD
Product Code		7741	7742