



Gear Oil

Conoco Gear Oil is a heavy-duty, extreme-pressure industrial gear oil developed for use in enclosed gearboxes operating under moderate to severe service conditions. It is available in viscosity grades ranging from ISO 68 to ISO 1500 (AGMA 2 EP to AGMA 9 EP).

Gear Oil is formulated with high viscosity index paraffinic base oils and fortified with extreme-pressure additives and oxidation inhibitors to provide good load-carrying capacity and resistance to oxidation. It also is inhibited to protect against rust and corrosion and to minimize foaming.

Gear Oil "M" is specially formulated for use in enclosed gearboxes equipped with mist lubrication systems. It contains a mist suppressant to reduce fogging and stray mist. It is available in three viscosity grades: ISO 100, 220 and 460.

Applications

Enclosed gearboxes manufactured by leading gearbox manufacturers such as:

- Amarillo
- David Brown
- Falk
- Lufkin

Gear Oil meets the performance requirements of:

- AGMA Specification 9005-E02 (formerly 250.04)
- Aluminum Company of America (ALCOA)
- Cincinnati Lamb Specifications P-63 (2 EP), P-76 (3 EP), P-77 (4 EP), P-74 (5EP), P-59 (6 EP), P-35 (7 EP) and P-78 (8A EP)
- U.S. Steel 224

Outstanding Features

- Long service life
- Good oxidative and thermal stability
- Minimizes deposits and varnish formation
- Good load-carrying capacity
- Protects against scuffing and wear
- Inhibited against rust and corrosion
- Rapid water separation
- Quick foam release

**Extreme-Pressure
Industrial
Gear Oil**

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Gear Oil
Typical Properties

ISO Grade	68	100	150	220	320	460
AGMA Grade	2 EP	3 EP	4 EP	5 EP	6 EP	7 EP
Specific Gravity @ 15.6°C (60°F)	0.882	0.878	0.884	0.895	0.891	0.907
Density, lbs/gal	7.36	7.33	7.37	7.46	7.43	7.56
Color, ASTM D1500	3.5	3.5	3.5	5.0	5.0	6.0
Flash Point (COC), °C (°F)	235 (455)	235 (455)	243 (469)	249 (480)	254 (489)	254 (489)
Pour Point, °C (°F)	-36 (-33)	-36 (-33)	-24 (-11)	-21 (-5)	-18 (0)	-12 (10)
Viscosity,						
cSt @ 40°C	68	100	150	220	320	460
cSt @ 100°C	8.7	11.5	14.9	18.9	23.7	30.7
SUS @ 100°F	351	521	793	1,160	1,722	2,460
SUS @ 210°F	56	66	79	94	118	150
Viscosity Index	103	102	97	96	96	96
Acid Number, ASTM D974, mg KOH/g	0.51	0.51	0.51	0.51	0.51	0.51
Copper Corrosion, ASTM D130	1a	1a	1a	1a	1a	1a
Four-Ball EP, ASTM D2596,						
Weld Load, kgf	250	315	315	315	315	315
Four-Ball Wear, ASTM D4172,						
Scar Diameter, mm	0.30	0.28	0.28	0.28	0.28	0.25
FZG Gear Test, ASTM D5182,						
Pass Stage	12	12	12	12	12	12
Timken OK Load, ASTM D2782, lb	60	60	60	60	60	60

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Gear Oil
Typical Properties

ISO Grade	680	1000	1500	100M	220M	460M
AGMA Grade	8 EP	8A EP	9 EP	3 EP	5 EP	7 EP
Specific Gravity @ 15.6°C (60°F)	0.913	0.913	0.913	0.878	0.895	0.907
Density, lbs/gal	7.62	7.62	7.62	7.33	7.46	7.56
Color, ASTM D1500	7.5	8.0	8.0	3.5	5.0	6.0
Flash Point (COC), °C (°F)	260 (500)	280 (536)	291 (556)	235 (455)	249 (480)	254 (489)
Pour Point, °C (°F)	-10 (14)	-5 (23)	-3 (27)	-36 (-33)	-21 (-5)	-12 (10)
Viscosity,						
cSt @ 40°C	680	1000	1500	100	220	460
cSt @ 100°C	39.0	52.0	65.0	11.5	18.9	30.7
SUS @ 100°F	3,672	5,423	8,218	521	1,160	2,460
SUS @ 210°F	190	253	316	66	94	150
Viscosity Index	95	96	96	102	96	96
Acid Number, ASTM D974, mg KOH/g	0.60	0.60	0.60	0.73	0.73	0.73
Copper Corrosion, ASTM D130	1a	1b	1b	1a	1a	1a
Four-Ball EP, ASTM D2596,						
Weld Load, kgf	315	315	315	315	315	315
Four-Ball Wear, ASTM D4172,						
Scar Diameter, mm	0.25	0.23	0.23	0.28	0.28	0.25
FZG Gear Test, ASTM D5182,						
Pass Stage	12	12	12	12	12	12
Timken OK Load, ASTM D2782, lb	60	60	60	60	60	60

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