

TEC-GUARD

DEFEND

SYNTHETIC EXTREME-PRESSURE GEAR OIL

DESCRIPTION

ISO 68, 100, 150, 220, 320, 460 & 680

Tec-Guard Defend Synthetic EP Gear Oils are full synthetic oil engineered for enclosed industrial gearboxes operating under extreme pressures and/or temperatures and shock loads. Formulated with thermally stable extreme-pressure (EP) additives.

BENEFITS

- Proven wear and micropitting protection
- Dampens shock-loads and delivers excellent wear protection for gears and bearings
- Exceeds a wide range of performance specifications for versatility and convenience
- Resists heat and deposits for superior gear and bearing cleanliness
- Low pour points provide reliable cold-temperature start-up efficiency and lubrication
- Excellent seal compatibility helps reduce leaks and extend seal life
- Filtered to a 14/11 level at the time of packaging (ISO68 - ISO320)

TECHNICAL DATA

TYPICAL CHARACTERISTICS	METHODS	DEFEND SYNTHETIC EP GEAR OIL						
		68	100	150	220	320	460	680
AGMA Grade		2EP	3EP	4EP	5EP	6EP	7EP	8EP
Viscosity @ 100°C, cSt	ASTM D 445	11.5	14.6	19.7	26.8	35.7	49.2	74.3
Viscosity @ 40°C, cSt	ASTM D 445	71.7	100.4	149.1	222.1	324.1	457.4	678.6
Viscosity Index	ASTM D 2270	153	151	152	155	156	168	190
Specific Gravity (g/ml)	ASTM D1298	0.8529	0.8571	0.8607	0.8654	0.8676	0.8686	0.8633
Density (lbs./gal)	ASTM D 1298	7.102	7.137	7.167	7.207	7.224	7.233	7.189
Color	ASTM D1500	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5	L0.5
Flash Point, °C (F) (COC)	ASTM D 92	238 (460)	236 (457)	238 (460)	238 (460)	246 (475)	244 (471)	250 (482)
Fire Point, °C (F) (COC)	ASTM D 92	278 (532)	280 (536)	284 (543)	280 (536)	286 (547)	284 (543)	306 (583)
Pour Point, °C (°F)	ASTM D 97	-50 (-58)	-50 (-58)	-44 (-47)	-40 (-40)	-40 (-40)	-35 (-31)	-31 (-24)
Micropitting @ 90°C Load Stage,	FVA 54	-	-	>10	>10	>10	>10	>10
GFT Classification	-			GFT=high	GFT=high	GFT=high	GFT=high	GFT=high
FZG Failure Stage (A/8.3/90)	-	>12	>12	>12	>12	>12	>12	>12
FZG Failure Stage (A/16.6/90)	-	-	-	>12	>12	>12	>12	>12
FAG FE-8 Bearing Test (DIN 51589-3)	-	-	-	Pass	Pass	Pass	Pass	Pass
Four Ball EP	ASTM D2783							
a) Weld, kg	-	250	250	250	250	250	250	250
b) Load Wear Index, kg	-	45	52	54	55	58	54	54
Falex B (Failure), lbf	ASTM D3233	2750	2750	3000	3000	3000	3250	3250
Timken OK Load, lbs	ASTM D2782	>90	>90	>90	>90	>90	>90	>90
FOAM Tendency	ASTM D892							
SEQ I (ml)	-	0/0	0/0	0/0	0/0	0/0	0/0	0/0
SEQ II (ml)	-	10/0	10/0	10/0	10/0	10/0	10/0	25/0
SEQ III (ml)	-	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Demulsibility	ASTM D1401	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0
		(25)	(25)	(25)	(25)	(25)	(25)	(25)
Copper Corrosion 121°C, 3 hr	ASTM D130	1B	1B	1B	1B	1B	1B	1B
Rust Prevention	ASTM D665 A & B	Pass	Pass	Pass	Pass	Pass	Pass	Pass

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