

CITGO EP COMPOUNDS

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Date 10/15

**DESCRIPTION:** CITGO EP Compounds are designed for industrial gear lubrication extra-duty service in a wide variety of applications where extreme pressure load conditions prevail.

**BENEFITS:** CITGO EP Compounds are formulated with highly refined base stocks and select ashless additives to assure premium extreme pressure properties and provide effective lubrication under most service conditions.

These products can be used in mist lubrication systems and allow directed delivery of the oil and control of stray mist.

CITGO EP Compounds have a high viscosity index, excellent demulsibility, solution stability and thermal stability properties. They also provide excellent resistance to oxidation and foaming and are noncorrosive.

**APPLICATIONS:** CITGO EP Compounds have been formulated to meet recognized industrial gear oil requirements including:

DIN 51517 Part 3 CLP

US Steel 224

AGMA 9005-E02

ISO 12925-1 CKC/CKD

David Brown S1.53.101 (E)

GM LS2 EP Gear Oil

Fives Group Machine Gear Oil

They are recommended for lubrication of plain and antifriction bearings and gear drives that operate under extra-heavy-duty conditions.

These lubricants can be applied via misting systems and are suitable for use in bearing oil circulating systems.

Typical applications are steel mills, rubber mills, and similar heavy industries where ambient conditions include water, dirt, and scale.

CITGO EP Compounds are formulated for the lubrication of industrial spiral bevel, helical, spur and herringbone gears. They are especially well-suited for use in multiple gear drives that operate at greatly increased pressure between the surfaces of the gear teeth or where severe shock or heavy loads are encountered.

**NOTE:** Consult your owner's manual for proper lubricant selection.

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## CITGO EP COMPOUNDS

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## TYPICAL PROPERTIES:

CITGO EP COMPOUNDS									
Grade	68	100	150	220	320	460	680	800	
Material Code	631110001	631120001	631130001	631140001	631150001	631170001	631180001	631181001	
Gravity, ASTM D4052, °API	30.6	30.2	28.0	27.5	27.0	26.3	26.8	24.0	
Density, lb/gal at 60°F	7.27	7.29	7.39	7.41	7.43	7.47	7.49	7.6	
Flash Point, COC, ASTM D92, °F (°C)	464 (240)	482 (250)	509 (265)	491 (255)	500 (260)	491 (255)	572 (300)	482 (250)	
Viscosity:									
ASTM D445, cSt at 40°C	67.5	97	147.5	215	314	435	639	805	
cSt at 100°C	8.6	11.0	14.5	18.5	23.9	30.6	35.8	43.6	
Viscosity Index, ASTM D2270	99	97	95	94	96	96	90	95	
Pour Point, ASTM D97, °F(°C)	5 (-15)	5 (-15)	5 (-15)	5 (-15)	5 (-15)	5 (-15)	15 (-9)	15 (-9)	
Color, ASTM D1500	1.0	2.5	3.0	3.0	3.5	4.0	D8.0	4.5	
Copper (Cu) Corrosion, ASTM D130 <sup>(1)</sup>	1 B	1 B	1 A	1 B	1 A	1 A	2 C	2 C	
Demulsibility, ASTM D2711B									
Water in Oil, %	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	
Total Free Water, mL	80	80	80	80	80	80	80	80	
Emulsion, mL	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	
Oxidation Test <sup>(2)</sup>	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
Rust Test, ASTM D665A & B	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
Timken OK Load, ASTM D2782, lbs.	65	70	85	65	70	75	70	70	
Four Ball EP Test, Weld, ASTM D2783, kg	315	315	315	315	315	315	315	315	
Four Ball Wear at 20 kg, ASTM D4172, mm	0.29	0.30	0.29	0.23	0.21	0.20	0.35	0.35	
Foam Test, ASTM D892, Seq. I, II, III	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
ISO VG No.	68	100	150	220	320	460	680	Between 680-1000	
AGMA Grade	2 EP	3 EP	4 EP	5 EP	6 EP	7 EP	8 EP	Between 8 & 8A EP	
Fives Cincinnati U.S. Steel Req. No. 224	P-63 Meets	P-76 Meets	P-77 Meets	P-74 Meets	P-59 Meets	P-35 Meets	-	-	

**Notes:** (1) Three hours at 212°F.

(2) Per U.S. Steel Requirement No. 224 (ASTM D2893, 312 hrs. at 99°C).

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