

C I T G O E P C O M P O U N D S

Date 01/10

- DESCRIPTION:** CITGO EP Compounds provide a complete range of gear oils designed for extra-duty service in a wide variety of industrial applications where extreme pressure conditions prevail.
- BENEFITS:** These lubricants are made from high quality, solvent-refined base stocks. Selected ashless additives assure extreme pressure properties and provide particularly effective anti-wear characteristics under all service conditions.
- These products contain an additive which enables mist application with 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 U.S. Steel Requirement 224, AGMA EP (250.04) and DIN 51517 Part 3 (CLP). 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. Boundary lubrication regimes are successfully controlled by these lubricants.
- 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 overloads are encountered.

(Continued)

CITGO EP COMPOUNDS

Date 01/10 - (Continued)



TYPICAL PROPERTIES: CITGO EP COMPOUNDS

Grade	68	100	150	220	320	460	680
Material Code	631110001	631120001	631130001	631140001	631150001	631170001	631180001
Gravity, ASTM D 4052, °API	30.6	28.0	27.5	27.0	26.3	24.7	
Density, lb/gal at 60°F	7.27	7.29	7.39	7.41	7.43	7.47	7.54
Flash Point, COC, ASTM D 92, °F (°C)	464 (240)	482 (250)	509 (265)	491 (255)	500 (260)	491 (255)	572 (300)
Viscosity:							
ASTM D 445, cSt at 40°C	67.5	97	147.5	215	314	435	639
cSt at 100°C	8.6	11.0	14.5	18.5	23.9	30.6	35.8
Viscosity Index, ASTM D 2270	99	97	95	94	96	96	90
Pour Point, ASTM D 97, °F(°C)	5 (-15)	5 (-15)	5 (-15)	5 (-15)	5 (-15)	5 (-15)	15 (-9)
Color, ASTM D 1500	1.0	2.5	3.0	3.0	3.5	4.0	D8.0
Copper (or Cu) Corrosion, ASTM D 130 ⁽¹⁾ , Max.	1 B	1 B	1 A	1 B	1 A	1 A	2 C
Demulsibility, ASTM D 2711B	1.0	1.0	1.0	1.0	1.0	1.0	2.0
Water in Oil, % Max.	80	80	80	80	80	80	80
Total Free Water, ml., Min.	1.0	1.0	1.0	1.0	1.0	2.0	2.0
Emulsion, ml. Max	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Oxidation Test ⁽²⁾	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Rust Test, ASTM D 665A & B	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Timken OK Load, ASTM D 2782, lbs.	65	70	85	65	70	75	70
Four Ball EP Test, Weld, ASTM D 2783, kg.	250	250	250	250	250	250	315
Four Ball Wear at 20 kg., ASTM D 4172, mm	0.29	0.30	0.29	0.23	0.21	0.20	0.35
Foam Test, ASTM D 892, Seq. I, II, III	Pass	Pass	Pass	Pass	Pass	Pass	Pass
ISO VG No.	68	100	150	220	320	460	680
AGMA Grade	2 EP	3 EP	4 EP	5 EP	6 EP	7 EP	8 EP
ASTM Grade	315	465	700	1000	1500	-	-
Cincinnati Lamb	P-63	P-76	P-77	P-74	P-59	P-35	-
U.S. Steel Req. No. 224	Meets	Meets	Meets	Meets	Meets	Meets	-

Notes: (1) Three hours at 212°F.
(2) Per U.S. Steel Requirement No. 224 (ASTM D 2893, 312 hrs. at 99°C).