

## LUBRICANTS AND RELATED PRODUCTS FOR INDUSTRIAL USE

## INA Epol SP

### General Description - Application

INA Epol SP oil are based on solvent - refined HVI paraffinic base oils and sulphur - phosphorus ashless EP additives. Posses very good oxidation and thermal stability. Intended primarily for all types of enclosed industrial gear drives, including worm gears, combines high load - carrying capacity in steel gear transmissions with good antifriction characteristics in steel/phosphorus bronze contact. Suitable for lubrication of heavily loaded gears where surface pressures on gear flanks exceed 500 N/mm<sup>2</sup>. Although designed primarily for the lubrication of gears, their high overall performance makes it possible to extend their use to system involving gears, plain bearings, rolling bearings and sliding surfaces. Suitable for both circulating and splash - lubricated system and may also be used in oil - mist system in temperature range from -16 to 100 °C. Chlorine level in all grades is below 50 ppm.

### Performance Level - Specifications

ISO 6743-6 L-CKC; ISO 12925-1 CKC; DIN 51517 Part 3 CLP  
 ANSI/AGMA 9005 – D 94 EP and E02  
 Cincinnati Machine P-76 (ISO VG 100)  
 Cincinnati Machine P-77 (ISO VG 150) - Approval  
 Cincinnati Machine P-74 (ISO VG 220) - Approval  
 Cincinnati Machine P-59 (ISO VG 320) - Approval  
 AISE/US Steel 224: David Brown S1.53.1001  
 INA N 22-166

Properties	INA Epol SP								Method
ISO -L-CKC	68	100	150	220	320	460	680	1000	ISO 3448
ANSI/AGMA 9005-E02	2EP	3EP	4EP	5EP	6EP	-	-	-	-
Density at 15 °C, g/cm <sup>3</sup>	0,885	0,888	0,893	0,898	0,902	0,906	0,915	0,932	ISO 3675
Kinematic Viscosity , mm <sup>2</sup> /s									
- at 40 °C	68	100	150	220	320	460	680	940	ISO 3104
- at 100 °C	8,5	11,0	14,4	18,6	23,6	29,9	37,6	42,1	
Viscosity Index	94	92	93	93	93	93	91	80	ISO 2909
Flash Point, (COC) °C	210	220	230	240	250	260	270	290	ISO 2592
Pour Point, °C	-24	-22	-22	-22	-21	-16	-11	-6	ISO 3016
Corrosion (Cu, 100 °C, 3 h)	1 b								ISO 2160
Water Content, %	max. 0,1								ISO 3733
Deemulsibility									ASTM D 2711
-free water, ml	82								
-emulsion, ml.	0,5								
-water in oil, %	0,4								
Water Separability (Deemulsibility)									ISO 6614
- at 54 °C, 40-37-3 ml, min	20							-	
- at 82 °C, 40-37-3 ml, min	-							20	
Oxidation (121 °C), ΔVk100, %	4,5			5,5					ASTM D 2893
EP Test – Weld Point, N	3150								ASTM D 2783
AW test-Average scar diameter (193 N/1800 min <sup>-1</sup> /54 °C/1 h), mm	0,30								ASTM D 4172
FZG, A/8,3/90	>12								DIN 51354
Timken OK Load, N	295								ASTM D 2782

The above figures are typical of those obtained with normal production tolerance and do not constitute a specification. Limited values are defined by above mentioned specifications.