MAZAK 3

ZnAl4

EN1774 ZL0400, ASTM B86 (AG 40 A), R301(ZnAl4)

Mazak 3 has a very desirable combination of mechanical and physical properties which, coupled with its ability to be cast by the hot chamber diecasting process, makes this the most widely used alloy. It has many wide-ranging application including automotive engineering, builders hardware, locks, toys and giftware.

Mazak 3 is unsurpassed in its ability to take a variety of surface finishes such as electroplating, powder coating, anodising, etc. for both decorative purposes and as an extra protection for extra-ordinarily severe corrosive environments. It is readily machined and good formability assists assembly and forming processes.

Mazak 3 is available in standard or claw end ingot forms.

MECHANICAL PROPERTIES	AS-CAST	AGED
Tensile Strength (MPa)	283	241
Shear Strength (MPa)	214	
Elongation (% in 51mm)	10	16
Hardness (Brinell - 500Kg)	82	72
Impact Strength (Energy, Joules)	58.3	55.6
Fatigue Strength 5 x 10^8 cycles (MPa)	47.6	

PHYSICAL PROPERTIES	
Density	6.7 Kg/dm^3 at 21°C
Solidification shrinkage	1.17%
Casting shrinkage	0.6% (pressure diecast)
Freezing range	381 - 387°C
Casting temperature	400 - 420°C
Specific heat capacity	418.7 J/Kg/°C at 20 - 100°C
Thermal expansion	27.4 x 10^{-6} linear per °C at 20 - 100°C
Thermal conductivity	113 W/m/hr/m^2/°C at 70 - 140°C
Electrical conductivity	27% IACS
Electrical resistance	6.3694 µ ohm cm at 20°C

TYPICAL ANALYSIS

ALLOYING ELEMENTS	
Aluminum	4.0%
Magnesium	0.05%

IMPURITIES	
Iron	< 0.01%
Lead	< 0.003%
Cadmium	< 0.003%
Tin	< 0.001%
Nickel	< 0.001%
Silicon	< 0.02%
Copper	< 0.03%