

MAZAK 8

ZnAl8Cu1

EN1774 ZL0810, R301(ZnAl8Cu1)

Mazak 8 is a creep resisting high strength alloy for hot chamber pressure diecasting. It offers significant advantages in elevated temperature applications subject to continuous stress such as automotive underbonnet parts, electrical components and pneumatic equipment. The yield strength of pressure diecast Mazak 8 is very high which combined with its good wear resistance makes it especially suitable for parts such as gears and mechanical linkages.

Mazak 8 can also be gravity diecast to produce parts with good surface finish suitable for subsequent electroplating. It is less prone to shrinkage problems than zinc alloys containing higher quantities of aluminium and still offers good mechanical properties.

MECHANICAL PROPERTIES	AS-CAST	AGED	GRAVITY
Tensile Strength (MPa)	374	297	220 - 255
Yield Strength (MPa)	290	225	210
Shear Strength (MPa)	275	227	241
Elongation (% in 51mm)	6 - 10	20	1 - 2
Hardness (Brinell - 500Kg)	100 - 106	91	85 - 95
Impact Strength (Energy, Joules)	42	17	
Fatigue Strength 5 x 10 ⁸ cycles (MPa)	103		52

PHYSICAL PROPERTIES	
Density	6.3 Kg/dm ³ at 21°C
Solidification shrinkage	1.1%
Casting shrinkage	0.7% (pressure diecast)
Freezing range	375 - 404°C
Casting temperature	415 - 430°C
Specific heat capacity	435.4 J/Kg/°C at 20 - 100°C
Thermal expansion	23.3 x 10 ⁻⁶ linear per °C at 20 - 100°C
Thermal conductivity	114.7 W/m/hr/m ² /°C at 70 - 140°C
Electrical conductivity	27.7% IACS
Electrical resistance	6.2 μ ohm cm at 20°C

TYPICAL ANALYSIS

ALLOYING ELEMENTS	
Aluminum	8.6%
Copper	1.1%
Magnesium	0.025%

IMPURITIES	
Iron	< 0.03%
Lead	< 0.003%
Cadmium	< 0.003%
Tin	< 0.001%
Nickel	< 0.001%
Thallium	< 0.001%
Indium	< 0.0005%
Manganese	< 0.01%