



Zinc Die Casting Alloys—ZA8 (ZnAl8Cu1、ZP0810)

ZA Alloys were originally a family of Zinc-based gravity casting alloys, but introduced as die casting alloys in the 1970's. ZA8 is the most economical of the ZA alloys due to its ability to be cast in a hot chamber die casting machine.

Summary of Benefits:

- Can be die cast and gravity cast.
- Lighter than Zamak alloys.
- ZA8 offers improved strength, hardness, fatigue and creep performance.
- Commonly used for strength as well as its ability to be plated at lower cost than aluminum die casting alloys.
- Hot Chamber alloy.

Properties

Mechanical Properties:

Property	Die Casting	Permanent Mold
Ultimate Tensile Strength: ksi (MPa)	54 (374)	32-37 (221-255)
Yield Strength: ksi (MPa)	42 (290)	30 (206)
Elongation: % in 2"	6-10	1-2
Hardness: Brinell	95-110	85-90
Modulus of Elasticity: psi x 10 ⁶	12.4	12.4

Physical Properties:

Property	Value
Density: lb/cu in (g/cc)	0.227(6.3)
Melting Range: deg F (deg C)	707-759 (375-404)
Electrical Conductivity: %IACS	27.7
Thermal Conductivity: BTU/ft/hr/deg F	66.3
Coefficient of Thermal Expansion: $\mu\text{in/in/F}$ 68-212 deg F	12.9
Specific Heat: BTU/lb/deg F	0.104
Pattern or Die Shrinkage: in/in	0.007

Note: The above properties are published "typical" values tested on net shaped die cast test bars. The information found in these tables should be used for initial reference and for comparative purposes only. This data should not be used to establish design limits or as a reason for quality acceptance or rejection.

Chemical Analysis of ZA8(GB/T 8738-2014)

	Al	Mg	Cu	Fe	Pb	Cd	Sn	Ni	Zn
Ingot (GB/T 8738-2014)	8.2-8.8	0.02-0.03	0.9-1.3	0.035max	0.005max	0.005max	0.002max	0.001max	Bal
Die Cast (GB/T 13821-2023)	8.0-8.8	0.01-0.03	0.8-1.3	0.075max	0.006max	0.006max	0.003max	-	Bal

Bundle Color Code: **Blue**