



Zinc Die Casting Alloys ZA-27 (ZnAL27Cu2、ZP2720)

ZA Alloys were originally a family of Zinc-based gravity casting alloys, but introduced as die casting alloys in the 1970's. Research showed these alloys to have improved mechanical performance and lower density over most of the Zamak alloys. ZA-27 being the strongest, hardest and lightest alloy in the ZA family of zinc alloys.

Summary of Benefits:

- Can be die cast and gravity cast.
- Lightest of all Zinc Die Casting Alloys.
- ZA-27 is one of the strongest and hardest Zinc die castings alloys but must be cast in a cold chamber die casting machine.
- Due to higher aluminum content, this alloy must be cold-chamber cast.
- Improved performance as a die cast alloy.

Properties:

Mechanical Properties:

Property	Die Casting	Sand Cast
Ultimate Tensile Strength: ksi (MPa)	61(421)	58-64 (400-441)
Yield Strength: ksi (MPa)	55 (379)	54 (372)
Elongation: % in 2"	1-3	3-6
Hardness: Brinell	105-125	110-120
Modulus of Elasticity: psi x 10 ⁶	11.3	11.3

Physical Properties:

Property	Value
Density: lb/cu in (g/cc)	0.181(5.0)
Melting Range: deg F (deg C)	708-903 (376-484)
Electrical Conductivity: %IACS	29.7
Thermal Conductivity: BTU/ft/hr/deg F	72.5
Coefficient of Thermal Expansion: $\mu\text{in/in/F}$ -68-212 deg F	14.4
Specific Heat: BTU/lb/deg F	0.125
Pattern or Die Shrinkage: in/in	0.008

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 ZA-27 GB/T 8738-2014

	AL	Mg	Cu	Fe	Pb	Cd	Sn	Ni	Zn
Ingot (GB/T 8738-2014)	25.5-28.0	0.012-0.02	2.0-2.5	0.07max	0.005max	0.005max	0.002max	-	Bal
Die Cast (GB/T 13821-2023)	25.0-28.0	0.01-0.02	2.0-2.5	0.075max	0.006max	0.006max	0.003max	-	Bal

Bundle Color Code: **Blue**