Data Sheet

Zamak 5

Alternative Designations

ZnAl4Cu1

Key Features

Excellent machinability • Improved strength • Low ductility

Description

The higher copper content gives Zamak 5 an improved strength but is less ductile than Zamak 3. This reduction in ductility can influence formability during operations like bending, riveting, or crimping. Zamak 5 can also be more readily plated or finished than Zamak 3. It has high mechanical strength and can be used in applications where parts are subject to high-stress levels. It also has good resistance to corrosion.

Mechanical Properties

Yield strength	269 MPa
Tensile strength	328 MPa
Elongation at break	7%
Hardness	91
Module of elasticity	85.5 GPa

Physical Properties

Density	6.6 g/cm³
Electrical conductivity	1.56E+07 m/Ω · mm²
Coefficient of thermal expansion	27.4 K-1 · 10-6
Thermal conductivity	108.9 W/m · K
Specific heat capacity	419 J/kg · K

Chemical Composition

Al	3.7 – 4.3%	N	-
Bi	-	Nb	-
C	-	Ni	-
Cd	0.003 – 0.004%	O	-
Co	-	P	-
Cr	-	Pb	0.004 – 0.005%
Cu	0.7 – 1.2%	S	-
Fe	0.05 – 0.035%	Si	-
H	-	Sn	0.0015 – 0.002%
Mg	0.02 – 0.06%	Ti	-
Mn	-	V	-
Mo	-	Zn	Rest is Zn

Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit Materialdatacenter.com for further information on this material.