

## Zinc ZA-8 (Zn-8Al-1Cu-0.02Mg), Die Cast

Categories: [Metal](#); [Nonferrous Metal](#); [Zinc Alloy](#)

Material Notes: Recommended Casting Temperature 435-460°C

Key Words: ASTM B791; ASTN B669; UNS Z35635 (Ingot); UNS Z35636 (castings)

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	6.30 g/cc	0.228 lb/in <sup>3</sup>	
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	103	103	500 kg load; 10 mm hardened steel ball
Hardness, Knoop	129	129	Estimated from Brinell Value
Hardness, Rockwell A	42	42	Estimated from Brinell Value
Hardness, Rockwell B	65	65	Estimated from Brinell Value
Hardness, Vickers	116	116	Estimated from Brinell Value
Tensile Strength, Ultimate	374 MPa	54200 psi	
Tensile Strength, Yield	290 MPa @Strain 0.200 %	42100 psi @Strain 0.200 %	
Elongation at Break	8.0 %	8.0 %	in 5 cm
Modulus of Elasticity	85.5 GPa	12400 ksi	
Compressive Strength	252 MPa	36500 psi	
Fatigue Strength	103 MPa @# of Cycles 5.00e+8	14900 psi @# of Cycles 5.00e+8	Reverse Bend
Fracture Toughness	12.6 MPa-m <sup>1/2</sup>	11.5 ksi-in <sup>1/2</sup>	
Shear Strength	275 MPa	39900 psi	
Charpy Impact, Unnotched	42.0 J @Thickness 6.35 mm	31.0 ft-lb @Thickness 0.250 in	square bar
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000620 ohm-cm	0.00000620 ohm-cm	
Thermal Properties	Metric	English	Comments
Heat of Fusion	112 J/g	48.2 BTU/lb	
CTE, linear	23.2 µm/m-°C @Temperature 20.0 °C	12.9 µin/in-°F @Temperature 68.0 °F	
Specific Heat Capacity	0.435 J/g-°C	0.104 BTU/lb-°F	
Thermal Conductivity	115 W/m-K	798 BTU-in/hr-ft <sup>2</sup> -°F	
Melting Point	375 - 404 °C	707 - 759 °F	
Solidus	375 °C	707 °F	
Liquidus	404 °C	759 °F	
Processing Properties	Metric	English	Comments
Casting Temperature	435 - 460 °C	815 - 860 °F	
Component Elements Properties	Metric	English	Comments
Aluminum, Al	8.0 - 8.8 %	8.0 - 8.8 %	Addition, Casting
	8.2 - 8.8 %	8.2 - 8.8 %	Addition, Ingot form
Cadmium, Cd	<= 0.0050 %	<= 0.0050 %	Impurity, Ingot form
	<= 0.0060 %	<= 0.0060 %	Impurity, Casting
Copper, Cu	0.80 - 1.3 %	0.80 - 1.3 %	Addition, Casting
	0.80 - 1.3 %	0.80 - 1.3 %	Addition, Ingot form
Iron, Fe	<= 0.065 %	<= 0.065 %	Impurity, Ingot form
	<= 0.075 %	<= 0.075 %	Impurity, Casting
Lead, Pb	<= 0.0050 %	<= 0.0050 %	Impurity, Ingot form
	<= 0.0060 %	<= 0.0060 %	Impurity, Casting
Magnesium, Mg	0.015 - 0.030 %	0.015 - 0.030 %	Addition, Casting
	0.020 - 0.030 %	0.020 - 0.030 %	Addition, Ingot form
Tin, Sn	<= 0.0020 %	<= 0.0020 %	Impurity, Ingot form
	<= 0.0030 %	<= 0.0030 %	Impurity, Casting
Zinc, Zn	89.793 - 90.98 %	89.793 - 90.98 %	As balance; Ingot per ASTM B 669
	89.78 - 91.185 %	89.78 - 91.185 %	As balance; Castings per ASTM B 791

[References](#) for this datasheet.

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