

Table A-3-13 Chemical Composition: Zn and ZA Alloys

All single values are maximum composition percentages unless otherwise stated

Commercial: ASTM:	Zamak Die Casting Alloys				ZA Die Casting Alloys		
	No. 2	No. 3 AG-40A	No. 5 AG-41A	No. 7 AG-40B	ZA-8	ZA-12	ZA-27
Nominal Comp:	Al 4.0 Mg 0.035 Cu 3.0	Al 4.0 Mg 0.035	Al 4.0 Mg 0.055 Cu 1.0	Al 4.0 Mg 0.013 Cu 0.013	Al 8.4 Mg 0.023 Cu 1.0	Al 11.0 Mg 0.023 Cu 0.88	Al 27.0 Mg 0.015 Cu 2.25
Detailed Comp.							
Aluminum							
Al	3.5-4.3	3.5-4.3	3.5-4.3	3.5-4.3	8.0-8.8	10.5-11.5	25.0-28.0
Magnesium							
Mg	0.02-0.05	0.02-0.05 [Ⓐ]	0.03-0.08	0.005-0.020	0.015-0.030	0.015-0.030	0.010-0.020
Copper							
Cu	2.5-3.0	0.25 max [Ⓑ]	0.75-1.25	0.25 max	0.8-1.3	0.5-1.2	2.0-2.5
Iron							
Fe (max)	0.10	0.10	0.10	0.075	0.075	0.075	0.075
Lead							
Pb (max)	0.005	0.005	0.005	0.003	0.006	0.006	0.006
Cadmium							
Cd (max)	0.004	0.004	0.004	0.002	0.006	0.006	0.006
Tin							
Sn (max)	0.003	0.003	0.003	0.001	0.003	0.003	0.003
Nickel							
Ni	—	—	—	0.005-0.020	—	—	—
Zinc							
Zn	Balance	Balance	Balance	Balance	Balance	Balance	Balance

[Ⓐ] The magnesium may be as low as 0.015 percent provided that the lead, cadmium and tin do not exceed 0.003, 0.003 and 0.001 percent, respectively. [Ⓑ] For the majority of commercial applications, a copper content in the range of 0.25-0.75 percent will not adversely affect the serviceability of die castings and should not serve as a basis for rejection. Sources: ASTM B86 and ASTM B791.