

SAND CAST ALLOYS

CHEMICAL COMPOSITION PERCENT

ALUMINUM ASSOCIATION DESIGNATION	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Sn	Ti	OTHER	
											EACH	TOTAL
319.0	5.5 – 6.5	1.0	3.0 – 4.0	.50	.10	-	.35	1.0	-	.25	-	.50
355.0	4.5 – 5.5	.60	1.0 – 1.5	.50	.40 - .6	.25	-	.35	-	.25	.05	.15
C355.0	4.5 – 5.5	.20	1.0 – 1.5	.10	.40 - .6	-	-	.10	-	.20	.05	.15
356.0	6.5 – 7.5	.60	.25	.35	.20 - .45	-	-	.35	-	.25	.05	.15
A356.0	6.5 – 7.5	.20	.20	.10	.20 - .45	-	-	.10	-	.20	.05	.15
A357.0	6.5 – 7.5	.20	.20	.10	.40 - .7	-	-	.10	-	.04 - .20	.05 Other Be .04 - .07	.15
359.0	8.5 – 9.5	.20	.20	.10	.50 - .7	-	-	.10	-	.20	.05	.15
535.0	.15	.15	.05	.10 - .20	6.2 – 7.5	-	-	.05	-	.10 - .25	.05, Be- .007, B- .005	.15
713.0	.25	1.1	.40 – 1.0	.6	.20 - .50	.35	.15	7.0 – 8.0	-	.25	.10	.25
771.0	.15	.15	.10	.10	.80 – 1.0	.06 - .20	-	6.5 – 7.5	-	.10 - .20	.05	.15
OTHER												
ZA-12 (ZINC)		.075	.5 – 1.2		.015 - .03		-	Bal.	.003		Al 10.5-11.5, Pb .006, Cd .006	

NOTE: All single values are maximum percentages. For 355.0 aluminum, if iron exceeds 0.45, manganese content shall not be less than one-half iron content.

TYPICAL MECHANICAL & PHYSICAL PROPERTIES

ALUMINUM ASSOCIATION DESIGNATION	TENSILE STRENGTH - LBS/SQ IN	YIELD STRENGTH (.2% OFFSET) LBS/SQ IN	ELONGATION (% IN 2 IN)	BRINELL 500 Kg LOAD 10mm BALL	APPROX MELTING RANGE °F	DENSITY (LBS PER CU IN)	AVE COEFFICIENT OF THERMAL EXPANSION 68-212 °F	ELECTRICAL CONDUCTIVITY	THERMAL CONDUCTIVITY CGS
319.0	27,000	18,000	2.0	70	960-1120	.101	11.9	27	.27
355.0	27,500	15,500	3.5	75	1015-1150	.098	12.4	36	.34
C355.0	29,000	14,000	7.0	75	1015-1150	.098	12.4	39	.35
356.0	25,000	13,000	7.0	65	1035-1135	.097	11.9	39	.36
A356.0	27,000	13,000	8.0	65	1030-1135	.097	11.9	40	.36
535.0	35,000	18,000	9.0	60	1165-1020	.094	13.1	23	.24
713.0	36,000	26,000	5.0	74	1100-1185	.102	13.3	30	.29
771.0	43,000	33,000	5.0	93	1120-1185	.102	13.7	25	.26
OTHER									
ZA-12 (ZINC)	40,000-46,000	31,000	1-3	89-105	710-810	.218	13.4	28.3	67.1



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