



# Ritchey Metals

## Specifications for Aluminum Base Alloys

These are the most common ones we handle, Please call for information on others.

Chemical Specifications of Aluminum Alloys (Values listed are maximum limits if no range is given, and for ingot or sow form)												
Common Name	Silicon (Si)	Iron (Fe)	Copper (Cu)	Manganese (Mn)	Magnesium (Mg)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Titanium (Ti)	Tin (Sn)	Other (Each)	Other (Total)
A380.1	7.50-9.50		3.00-4.00	0.50	0.10		0.50	2.90		0.35		0.50
383.1	9.50-11.50	1.00	2.00-3.00	0.50	0.10		0.30	2.90		0.15		0.50
319.1	5.50-6.50	0.80	3.00-4.00	0.50	0.10		0.35	1.00	0.25			0.50
356.1	6.50-7.50	0.50	0.25	0.35	.25-.45			0.35	0.25		0.05	0.15

Mechanical Properties (Casting)									
Alloy	Ultimate Tensile Strength in Ksi x 103	Yield Strength in Ksi x 103	Elongation in 2"	Shear Strength in Ksi x 103	Brinell Hardness	Impact Strength in ft.-lbs.	Fatigue Strength Rotary Bend in Ksi x 103	Comprehensive Yield Strength in Ksi x 103	Modulus of Elasticity in Psi x 106
A380.1 (Die Cast)	47	24	3.0%	27	80	3	20	N/A	10.3
383.1 (Die Cast)	45	22	3.5%	25	80	N/A	19	N/A	10.3
319.1 (Sand Cast)	27	18	2.0%	22	70	4	10	19	10.7
356.1 (Sand Cast T6)	33	24	3.5%	26	70	8	8.5	25	10.5

Physical Properties (Casting)							
Alloy	Density in Lbs/in <sup>3</sup>	Melting Range in F	Electrical Conductivity	Thermal Conductivity	Coefficient of thermal expansion	Specific Heat	Pattern or Die Shrinkage
A380.1 (Die Cast)	0.098	1000-1100	327%	55.6	11.8	N.A	0.006
383.1 (Die Cast)	0.098	960-1080	20%	55.6	11.5	N/A	0.005
319.1 (Sand Cast)	0.101	960-1120	27%	65.5	11.9	N/A	N/A
356.1 (Sand Cast T6)	0.097	1035-1135	39%	87	11.9	N/A	N/A

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