

Spherical Aluminum Alloy Powder Properties (Metal Profile)

Grade	Al 1100	Al 2014	Al 2024	Al 2219	Al 3003	Al 3004	Al 3105	Al 4032	Al 4045	Al 4047	Al 5083 (AlMg4.5 Mn)	Al 6061	Al 7075
Melting Point (°C)	643-657	510	502-638	543	644	633	641	530-580	573-599	577-582	577	588	477-635
Density (g/cm3)	2.71	2.8	2.78	2.6-2.8	2.73	2.6-2.8	2.6-2.8	2.69	2.67	2.6	2.65	2.7	2.81
Poisson's Ratio	0.33	0.3	0.33	0.33	0.33	0.33	0.33	0.33	0.333	0.33	0.33	0.33	0.33
Tensile Strength (MPa)	89.6	186	186	172	130	215	150	370	-	-	290	124	228
Yield Strength (MPa)	34.0	96.5	75.8	76	125	170	130	-	-	-	145	55.2	103
Thermal Conductivity (W/mK)	218	192	193	171	162	162	173	130-150	171	-	117	180	173
Hardness (Brinell)	23	45	47	46	55	52	-	-	-	-	77	30	60
Particle Size (µm)	15-45, 15-53, 20-63, 45-105												
Chemical Composition (%)													
Cu	0.05-0.20	3.9-5.0	3.8-4.9	5.8-6.8	0.05-0.2	<0.25	<0.3	0.9	<0.3	<0.3	0.1	0.15-0.4	1.57
Fe	<0.55	<0.7	<0.5	<0.3	<0.7	<0.7	<0.7	-	<0.8	<0.6	<0.4	<0.7	0.12
Si	<0.4	0.5-1.2	<0.5	<0.2	<0.6	<0.3	<0.6	12.2	9-11	11.0-13.0	<0.4	0.4-0.8	0.17
Mn	0.05	0.4-1.2	0.3-0.9	0.2-0.4	1.0-1.5	1.0-1.5	0.3-0.8	-	<0.05	0.15	0.4-1.0	0.15	<0.01
Mg	-	0.2-0.8	1.2-1.8	<0.02	-	0.8-1.3	0.2-0.8	1.0	<0.05	0.10	4.0-4.9	0.8-1.2	2.75
Zn	0.10	<0.25	<0.25	<0.1	<0.1	<0.25	<0.4	-	<0.1	0.20	<0.25	<0.25	5.46
Cr	-	<0.1	<0.1	-	-	-	<0.2	<0.1	-	-	0.05-0.25	0.04-0.35	0.24
Ti	-	<0.15	<0.15	0.02-0.1	-	-	<0.1	-1210.15	<0.2	<0.15	<0.15	<0.15	0.01
Al	99.0	Rem	Rem	Rem	Rem	Rem	Rem	Rem	Rem	Rem	Rem	Rem	Bal.
Other Impurities	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	

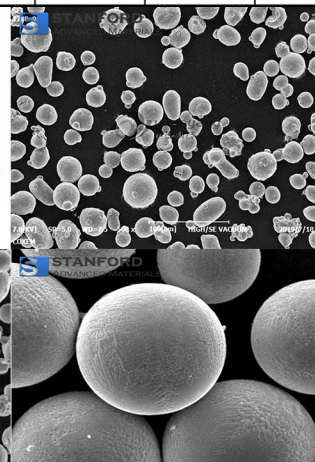
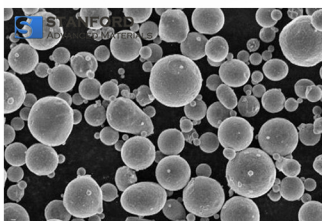
Feature

Good Wear Resistance
High Corrosion Resistance
Excellent Welding Performance

Main Application

Thermal Spraying Powder
Powder Metallurgy
3D Printing
Aerospace
Additive Manufacture
Building Materials

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Stanford Advanced Materials
23661 Birtcher Dr.
Lake Forest, CA 92630
Customer service: (949) 407 8904
Fax: (949) 812-6690
Email: sales@SAMaterials.com
Website: www.SAMaterials.com