

Metal Powders

Additive Manufacturing



DRIVING GLOBAL INNOVATION IN ADDITIVE MANUFACTURING

With a global manufacturing network, we can serve large scale applications, while having the flexibility for custom development to meet your needs.

For decades, Kymera has made high quality powder metals with the ability to match powder morphology, chemistry, and particle size required for critical applications at an industrial scale, making us a trusted global leader in metal powders and alloys.



MATERIALS

Aluminum

- Al-Si
- Al-Si-Mg
- Al-Cu
- Al-Zn-Mg

Copper

- Pure Cu
- Brass
- Bronze

Titanium

- Ti-6Al-4V
- CPTi

Custom alloys on request



AM TECHNOLOGIES

Binder Jetting

Powder Bed Fusion

Direct Energy Deposition

Cold Spray

Coatings



APPLICATIONS

Medical/ Orthopedic

Aerospace

Power

Thermal Management

Automotive



Kymera International

Email: kymera@kymerainternational.com

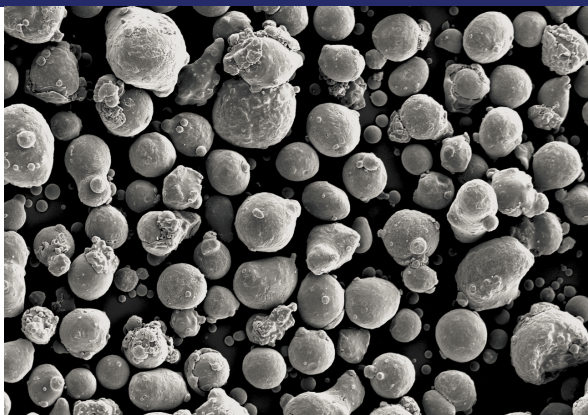
Web: www.kymerainternational.com

Phone: +1 919.544.8090

ALUMINUM ALLOY POWDERS

- Free flowing atomized aluminum alloys
- Wide range of tailored particle sizes available

Aluminum alloy powders are atomized using proprietary atomizing technologies and classified into particle size distributions tailored to customer specifications.



ALUMINUM ALLOY POWDER PROPERTIES

Standard Grades	AlSi10Mg0.4 20-63 µm	AlSi7Mg0.6 20-63 µm	AlSi12 20-63 µm
Chemical Analysis	Si: 9 - 11%	Si: 6.5 - 7.5%	Si: 11 - 13%
	Mg: 0.2 - 0.5%	Mg: 0.45 - 0.7%	
Oxygen	Max. 0.15%		
Other Elements	Additional elements can be measured by ICP		
Apparent Density	1.2 - 1.5 g/cm³		
Flow	max 25s		
Available Sieve Cuts	20 - 63 µm <45 µm <63 µm 45 - 75 µm 45 - 90 µm 25 - 106 µm		
PSD (Laser Scattering)			
x10	typ. 25 µm typ. 45 µm typ. 65 µm		
x50			
x90			
Other Available Alloys	AlSi9Cu3, Al6061, Al7075 Custom alloys on request		



Kymera International

Email: kymera@kymerainternational.com

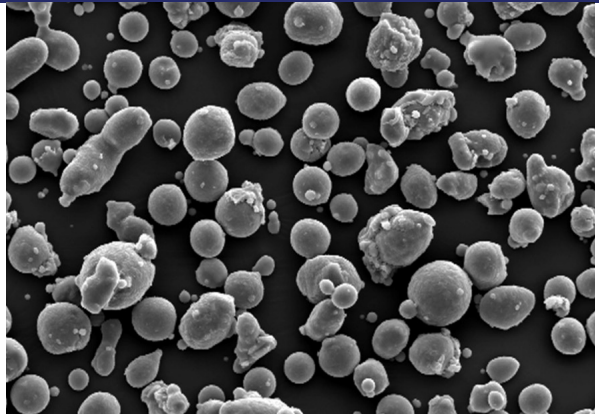
Web: www.kymerainternational.com

Phone: +1 919.544.8090

CUSTALLOY POWDERS

Custalloy was developed in partnership with a consortium of leading European firms to provide a high performance aluminum alloy specifically designed for laser powder bed fusion additive manufacturing to serve the needs of serial part production.

This patented Al-Si-Mg based alloy is heat-treatable to offer high strength or exceptional ductility, depending on the final application.



CUSTALLOY POWDER PROPERTIES

Apparent Density	1.3 g/cm ³
Flow	Free flowing
Chemical Analysis	Si: 3.3%
	Mg: 2.3%
	Bal. Al
Other Chem. Elements	Additional elements can be measured by ICP
Available Sieve Cuts	20 - 63 μ m
	45 - 75 μ m
	25 - 106 μ m

TYPICAL MECHANICAL PROPERTIES

Heat Treatment	As-Built Platform: 100 ° C [50 ° C]		Direct Aging	Soft Anneal
Yield Strength (MPa)	381 $\pm$ 3	[279 + 1]	411 $\pm$ 1	110 - 200
Tensile Strength (MPa)	483 $\pm$ 3	[442 + 1]	485 $\pm$ 2	190 - 310
Elongation at Break (%)	6.1 $\pm$ 1.2	[12.7 + 0.8]	4.7 $\pm$ 0.9	24 - 10

Samples for property evaluation printed on SLM Solutions 125 HL, mechanical properties assessed in the build direction (Vertical), all tensile samples machined to 5mm diameter according to DIN 50125 B. The physical and mechanical properties included in this datasheet are for general reference purposes and not to be considered suitable for design. Kymera International asserts no guarantee to its accuracy and assumes no responsibility.



Kymera International

Email: kymera@kymerainternational.com

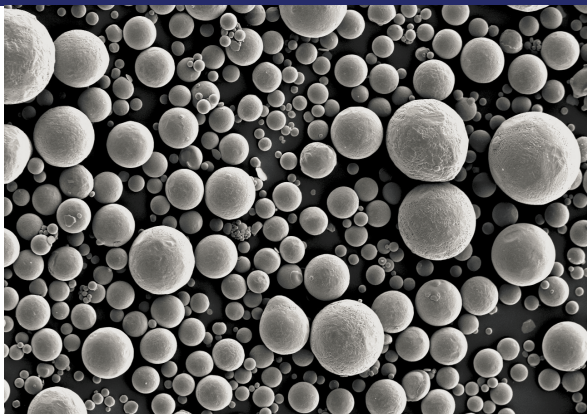
Web: www.kymerainternational.com

Phone: +1 919.544.8090

COPPER POWDERS

- Purity > 99.5%
- Wide range of tailored particle sizes available

Kymera offers a variety of standard and customized copper and copper alloy atomized powders well suited for laser bed powder fusion and binder jetting.



COPPER POWDER PROPERTIES

Standard Grades	Pure Cu 45 – 106 µm	CuNi2.3Si0.6 45 – 106 µm	CuSn11 10 – 56 µm
Chemical Analysis	Cu: >99.9 %	Ni: 2.1 – 2.5 % Si: 0.4 – 0.8 %	Sn: 10.0 – 11.5 % P: 0.2 – 0.4 %
Apparent Density	4.5 – 5.5 g/cm ³	4.2 – 5.0 g/cm ³	4.4 – 5.2 g/cm ³
Flow	max. 20 s		
x10	typ. 50 µm typ. 75 µm typ. 100 µm		
x50			
x90			
Hydrogen Loss	Max. 0.10%		
Available Sieve Cuts	<106 µm <180 µm <250 µm 45 – 75 µm 106 – 180 µm 250 – 500 µm		



Kymera International

Email: kymera@kymerainternational.com

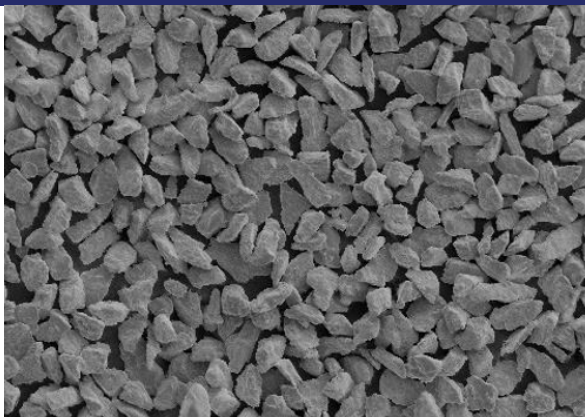
Web: www.kymerainternational.com

Phone: +1 919.544.8090

TITANIUM POWDERS

- Development of non-spherical Ti for Laser AM
- Collaborative R&D with University & Industry
- Melt-free titanium powders suitable for laser additive designed to lower overall material cost per part
- Produced using a proven high volume process already qualified for orthopedic implants

The melt-free production of these titanium powders avoids impurities and internal porosity, and offers a scalable alternative to spherical atomized products.



TITANIUM ALLOY POWDER PROPERTIES

Standard Grades	Ti-6Al-4V Grade 5	
AD	2.1 g/cm ³	
PSD (Laser Scattering)		
x10	45 - 60 µm	
x50	80 - 90 µm	
x90	<130 µm	
Oxygen		
Chemical Analysis	Oxygen	< 0.15
	Nitrogen	< 0.05
	Hydrogen	< 0.015

TYPICAL MECHANICAL PROPERTIES

	Annealed at 704 °C	HIP at 925°C	HIP + Anneal
UTS (MPa)	1,217	1,083	1,089
YS (MPa)	1,185	1,025	1,039
Max Strain (%)	8.7	16.7	16.1
E (GPa)	143	141	144
Density (g/cm3)	4.388	4.393	4.380
% vs. 4.430	99.0	99.2	98.9

20–130µm powder on an unmodified EOS M290. The physical and mechanical properties included in this datasheet are for general reference purposes and not to be considered suitable for design. Kymera International asserts no guarantee to its accuracy and assumes no responsibility.



Kymera International

Email: kymera@kymerainternational.com

Web: www.kymerainternational.com

Phone: +1 919.544.8090



Global Production Facilities

USA

Orangeburg, SC
Durham, NC
Robesonia, PA
Union, NJ

Australia

George Town, Tasmania

Austria

Ranshofen

Bahrain

Manama

China

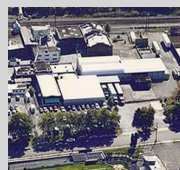
Suzhou

Germany

Esslingen
Velden

Slovenia

Kranj



Kymera International

Email: kymera@kymerainternational.com

Web: www.kymerainternational.com

Phone: +1 919.544.8090