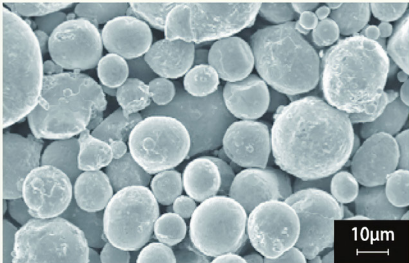


# Copper Powders for Additive Manufacturing

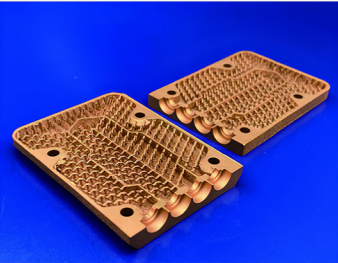


## Copper Alloy Powders for L-PBF

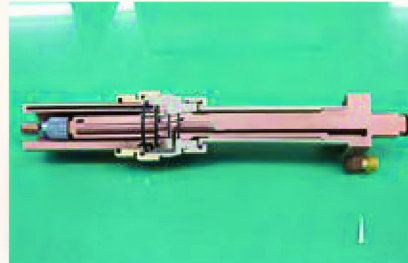
- ✓ MA-CCR25L is the highest conductivity Cu alloy for L-PBF(95% IACS and 377W/mK)
- ✓ MA-CCR25H with better mechanical property is appropriate for functional-structural applications
- ✓ Both two grades can be fully densified with printers with the laser output of 400W
- ✓ We can share our standard parameters to reduce customers' development cost
- ✓ Both grades are applicable to other laser-based 3D printing processes such as DED as well



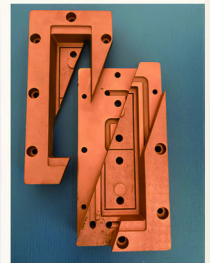
◆ MA-CCR25L ◆



◆ Heat sink ◆

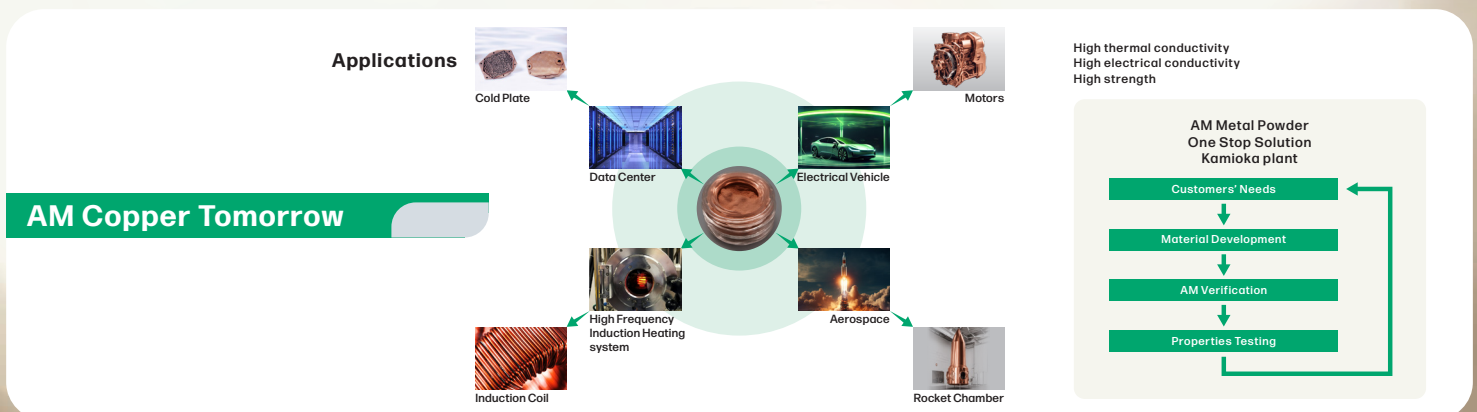


◆ Water cooled torch ◆

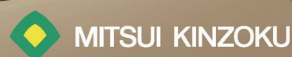


◆ Mold tool ◆

Product Grade	Features	Powde Properties		Properties of Printed Parts							Applications
		Dso	Tap Density	Relative Density	Thermal Conductivity	Electrical Conductivity	Tensile Strength	0.2% Strength	Elongation	Young's Modulus	
		µm	g/cm³	%	W/m · K	%IACS	MPa	MPa	%	GPa	
MA-CCR25L	High Conductivity	25	5.6	99.5	377	95	316	190	31	112	✓ Electrical Application ✓ Thermal Management
MA-CCR25H	High Conductivity-design for Aerospace	25	5.6	99.5	349	92	361	204	36	-	✓ Rocket Chamber
	High Strength			99.5	203	60	755	720	15	124	✓ Tooling ✓ Engine
Pure Copper (Reference Value)		-	-	-	398	100	195	200	35	117	



Advanced Functional Powder



MITSUI KINZOKU

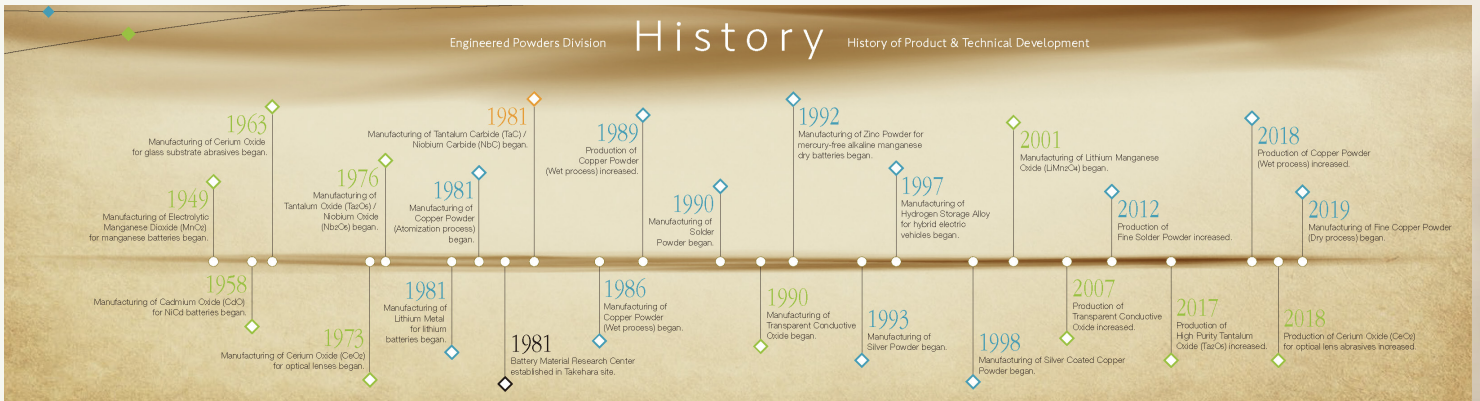
<https://www.mitsui-kinzoku.co.jp/project/kinoufun/en/>

# MITSUMI KINZOKU

Solving  
Connecting  
Realizing

Product Number	Atomization Process	Target AM Process	Powder Properties※			
			D <sub>10</sub> μm	D <sub>50</sub> μm	D <sub>90</sub> μm	O <sub>2</sub> %
MA-PC	Gas	L-PBF	14	30	51	0.04
MA-HC-2	Gas	Cold Spray	10	24	41	0.13
MA-HC-3	Gas	Binder Jet, DLP	8	15	24	0.13
MA-CKUR	Water	Other	3	8	26	0.22
MA-CKUL	Water	Other	6	13	29	0.19

※Reference value



## The Experience - High Brand Value

The Mitsui brand: Driving force behind the modernization of Japan



- In 2023, the Mitsui Group commemorates its 350th anniversary, tracing its origins back to Mitsui Takatoshi's 1673 kimono store, "Echigoya", in Nihonbashi, Edo. Throughout its history, the Group has become a force behind Japan's modernization.
- The Mitsui Group does not just represent business; it embodies Japan's spirit, fostering growth and fortifying the nation's foundations.
- The Mitsui Group, powered by people, aims to support global economy, and promote world peace and well-being.

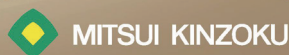
## The Quality - Future-Proof Factory Solutions

Kamioka plant: Dive into tomorrow's possibilities

Unlock the next generation of factory solutions with Kamioka Plant. Powered by our cutting-edge R&D center and top-tier automation technology.

For over 150 years, Kamioka Plant has stood as a beacon of the futuristic technologies combine with the super rich nature here.

Advanced Functional Powder



<https://www.mitsui-kinzoku.co.jp/project/kinoufun/en/>