MAKINO
Promise of Performance

Thexalloy

Thexalloy Alloy Powders for Additive Manufacturing Designed for LMD

DESCRIPTION

Thexalloy material is characterized to deliver excellent heat transfer and electrical properties. Through special alloying elements, superior strength can be achieved that is particularly ideal for high-stress applications.

The pre-alloyed powder material is designed to overcome low absorption and high heat dissipation concerns, enabling high density part production by the LMD process.

The tailored alloy composition is a novel controllable material combination with low coefficient of thermal expansion and high thermal conductivity, that results in its unique performance features such as superior softening resistance to maintain structural integrity at high temperatures.

This material with its unique performance features is well-suited for high-pressure die casting (HPDC) applications, where both strength and thermal durability are important.

KEY MATERIAL HIGHLIGHTS

- High thermal conductivity
- Lower thermal expansion
- Excellent heat dissipation
- High temperature strength

APPLICATIONS

- High-pressure die casting molds
- Plastic injection molds
- Heat sinks
- Electrodes for electric discharge machining (EDM)

POWDER PROPERTIES (ISO 4490, ISO 3923-1)

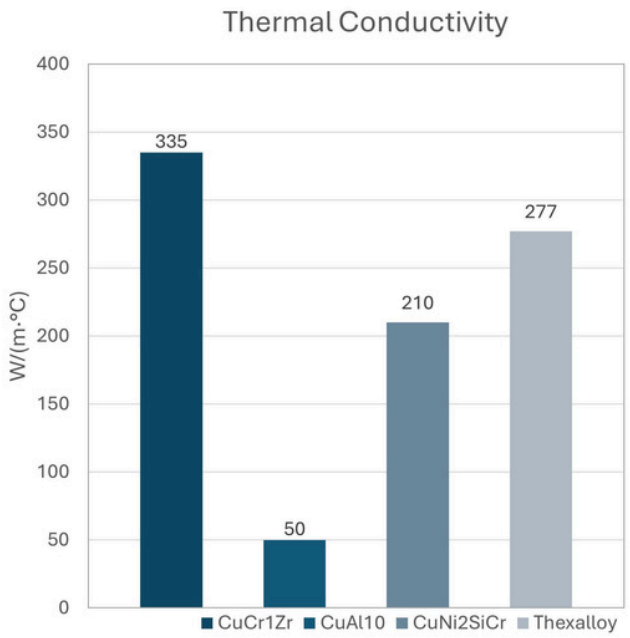
Particle Size Distribution (µm)	Hall Flow (s/50g)	Apparent Density (g/cm3)
20 - 90	13.3	4.18

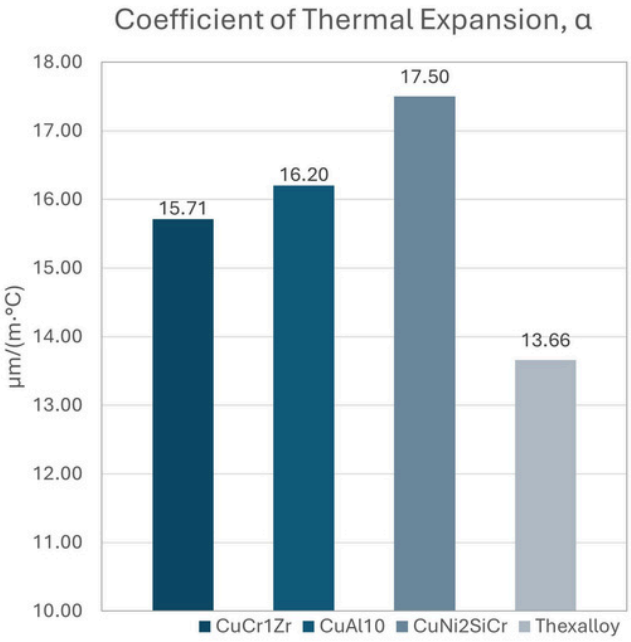
PHYSICAL PROPERTIES (ISO 3369)

Average Defect Percentage (%)
< 0.10

THERMAL PROPERTIES (ASTM E831, ASTM E1461)

Material	Thermal Conductivity W/(m·°C)	Specific Heat J/(Kg·°C)	Coefficient of Thermal Expansion, α µm/(m·°C) [At 25 to 300 °C]
CuCr1Zr	335	394	15.71
CuAl10	50	450	16.20
CuNi2SiCr	210	420	17.50
Thexalloy	277	335	13.66





PROCESS INFORMATION:

The properties reported in this Technical DataSheet are applicable to Makino AM powders tested and distributed by Makino and processed on Makino LMD machine utilizing parameters in accordance with relevant operating guidelines (inclusive of setup conditions and maintenance). The properties are obtained by following recommended protocols. Further information regarding the methods used by Makino can be provided upon inquiry.

DISCLAIMER:

The data and information provided represent, to the best of our knowledge, standard or average values and do not constitute guarantees for upper and lower limit parameters. The recommended applications for the material disclosed are exclusively for illustrative purposes that help the reader to conduct their independent assessments These suggestions are not intended to be expressed or implied warranties of suitability for the specific applications or any other purposes. The information included may be subject to change at any time without prior notification.

CONTACT US:

Our Safety Datasheet (SDS) is available upon request. For more information or support please contact Makino at sales-am@makino.com.sg or visit www.makino.com.sg

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