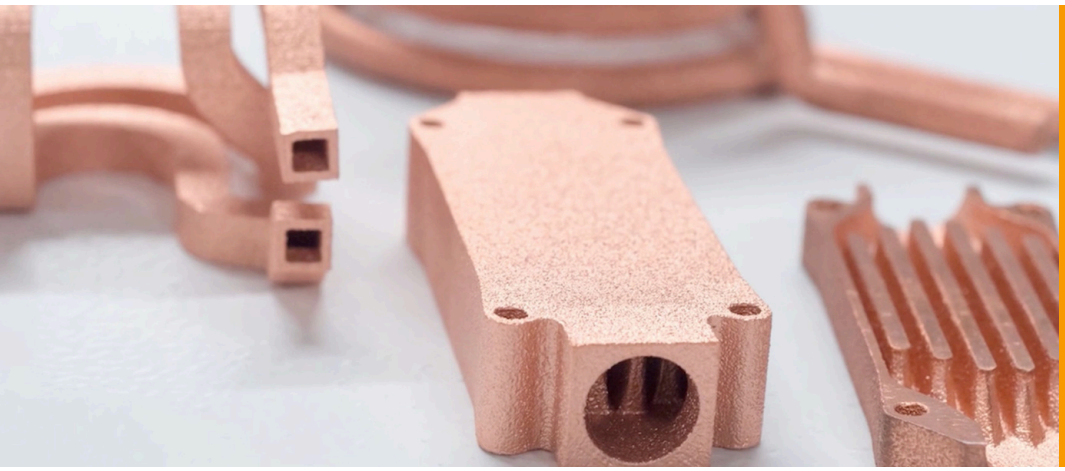
CuCrZr

INDUSTRIAL GRADE MATERIALS FOR SLM 3D PRINTING



MATERIAL NAME
CuCrZr

COLOR
Reddish-brown or copper-like finish

PROCESS
SLM

PRODUCT DESCRIPTION

CuCrZr is a high-performance copper alloy known for its excellent thermal and electrical conductivity, combined with good mechanical strength. It is widely used in industries requiring high heat resistance and conductivity, such as aerospace, electronics, and automotive. This material is ideal for applications like heat exchangers, welding electrodes, electrical contacts, and molds, where efficient heat dissipation and durability are crucial. Its versatility and performance make it a preferred choice for both industrial and specialized engineering applications.

TYPICAL APPLICATIONS

- Aerospace heat exchangers and cooling systems
- Energy high-performance welding electrodes
- Automotive resistance welding components
- Electronics electrical contacts and conductors
- Industrial high-thermal-conductivity molds

PRODUCT SAFETY

If there are sharp edges on the surface of the parts, be careful not to scratch them. If there are metal powders on the parts, be careful not to inhale them into the lungs and avoid contact with strong acids and alkalis.

PRODUCT DELIVERY & WAREHOUSING

- **STORAGE**
  Store in a dry, ventilated environment, avoiding moisture and exposure to corrosive chemicals.
  Apply protective coatings to prevent oxidation or corrosion of metal surfaces.

- **USAGE AND HANDLING**
  Remove burrs and residual materials from the product. Use protective equipment like gloves when handling.
  Avoid using the product in extreme environments or high-load scenarios; regularly inspect for mechanical performance.

- **CHEMICAL COMPATIBILITY**
  Avoid contact with strong acids, alkalis, or corrosive solvents. Use appropriate cleaning and maintenance solutions.
  Assess risks of oxidation, corrosion, or magnetic effects based on specific application environments.

MATERIAL PROPERTIES

Formed Part Properties	Value
Hardness	90.55 ± 2.61HV (As Bulid)
Yield Strength (Mpa)	/
Tensile strength (Mpa)	/
Heat-Treated Properties	**Value**
Hardness	/
Yield Strength (Mpa)	432 MPa
Tensile strength (Mpa)	543 MPa
Elongation at break	21%
Elastic Modulus (Gpa)	/
Other Properties	**Value**
Linear Expansion Coefficient (/°C)	1.867×10^{-5} /°C
Thermal Diffusion Coefficient (mm^2/s)	91.771 ± 0.222 mm^2/s
Coefficient of themal expension (/°C)	/
Thermal Conductivity	/
Electrical Resistivity	/
Electrical Conductivity	As Build: 21-26 %IACS Heat-Treated Properties: 91.20 ± 0.49 %IACS

Tips: **Want to explore a wider range of materials? Check out *https://www.unionfab.com/materials***