

## METAL SOLUTIONS

# EOS CopperAlloy CuCrZr

## Material Data Sheet

### EOS COPPERALLOY CUCRZR

EOS CopperAlloy CuCrZr has a favorable combination of electrical and thermal conductivity accompanied with good mechanical properties. This alloy reaches its good properties during heat treatment.

### MAIN CHARACTERISTICS

- High productivity 12 mm<sup>3</sup>/s with 80 µm layer thickness
- Moderate to high conductivity in heat treated condition together with good mechanical properties
- Chemical composition corresponds to C18150 and CW106C

### TYPICAL APPLICATIONS

- Rocket engine parts
- Heat exchangers
- Induction coils

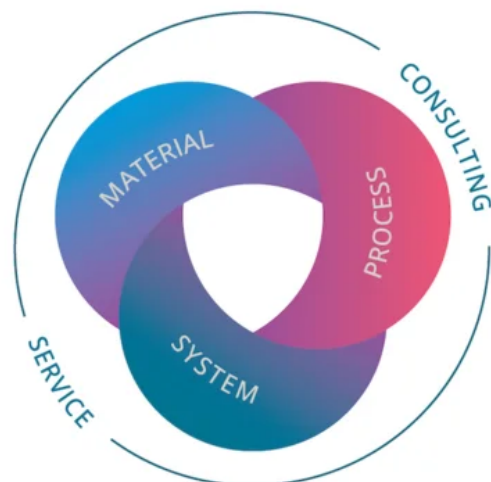
## The EOS Quality Triangle

EOS uses an approach that is unique in the AM industry, taking each of the three central technical elements of the production process into account: the system, the material and the process. The data resulting from each combination is assigned a Technology Readiness Level (TRL) which makes the expected performance and production capability of the solution transparent.

EOS incorporates these TRLs into the following two categories:

- Premium products (TRL 7-9): offer highly validated data, proven capability and reproducible part properties.
- Core products (TRL 3 and 5): enable early customer access to newest technology still under development and are therefore less mature with less data.

All of the data stated in this material data sheet is produced according to EOS Quality Management System and international standards



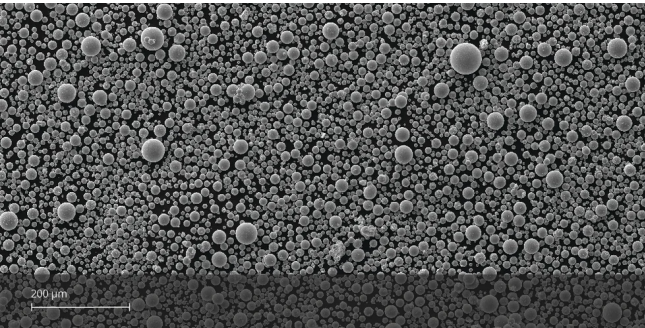
# POWDER PROPERTIES

## Powder Chemical Composition (wt.-%)

Element	Min.	Max.
Cu		Balance
Cr	0.45	1.15
Zr	0.05	0.25
Fe	-	0.08
Si	-	0.01

## Powder Particle Size

GENERIC PARTICLE SIZE DISTRIBUTION	15 - 45 µm
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# HEAT TREATMENT

## Description

CuCrZr can be heat treated to reach different mechanical properties and conductivity values.

## Steps

Conductivity optimized heat treatment:

- Step 1 - Solution: 0,5h hold in 980°C under inert gas flow/atmosphere. Quenching in water straight from the furnace
- Step 2 - Ageing: 3h hold in 430°C under inert gas flow/atmosphere. Slow cooling in inert gas until temperature is under 100°C

Tensile optimized heat treatment:

- Ageing: 1h hold in 490°C under inert gas flow/atmosphere.
- Slow cooling in inert gas until temperature is under 100°C

## HEADQUARTERS

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