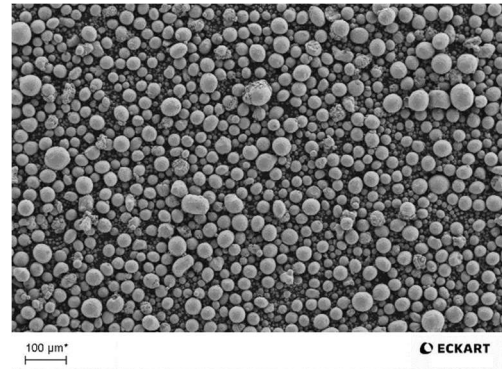


ECKART TLS Copper Powder

10.06.2021 Version 1

Almost all industries hold copper and copper alloys in high regard for its high electrical and thermal conductivity. The application range includes LPBF, EBM, Laser Cladding and Cold Spray. In additive manufacturing copper powder are used to produce heat exchanger components, components for electrical technology and inductions coils, for example. ECKART TLS offers a wide product range from standard, like low oxygen Cu and CuCr1Zr to special customized alloys.

All grades of copper powder are produced by inert gas atomization, resulting in high quality, spherical, and contamination free powder.



Chemical Composition

ECKART TLS standard copper powder from stock

| | Composition (wt%) | | | | |
|---------|-------------------|-----------|----------|-------|-------|
| | Cu | Cr | Zr | Fe | Si |
| OFHC-Cu | ≥99.95 | - | - | - | - |
| Cu 99,7 | ≥99.7 | - | - | - | - |
| CuCr1Zr | Bal. | 0.50-1.20 | 0.03-0.3 | ≤0.08 | ≤0.10 |

CuCr1Zr according to CW106C.

Raw material chemical composition of OFHC-Cu according to CW007A

Particle Size Distribution and Powder Properties

Particle size distribution and physical powder properties of copper powder sizes are listed below.

Copper powder sizes according to customer specifications are also available on request

| | Particle Size Distribution (μm) | | | Powder Properties | | |
|----------|---------------------------------|-------|--------|-------------------|-----------------------|-------------|
| | D(10) | D(50) | D(90) | Flow Rate | Apparent Density | Circularity |
| 15-53μm | 10-20 | 26-36 | 42-54 | - | - | ≥0.94 |
| 20-63μm* | 20-30 | 36-46 | 57-65 | ≤16s/50g | >4.7g/cm ³ | ≥0.94 |
| 45-100μm | 45-56 | 63-78 | 80-110 | ≤15s/50g | >4.8g/cm ³ | ≥0.94 |

Particle size distribution according to ASTM B822. Flow rate and apparent density according to ASTM B213 and ASTM B212.

Circularity according to ISO 9276-6, mean values measured via dynamic image analysis (ISO 13322-2).

*20-63μm only available for CuCr1Zr.

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