

Zirconium Copper

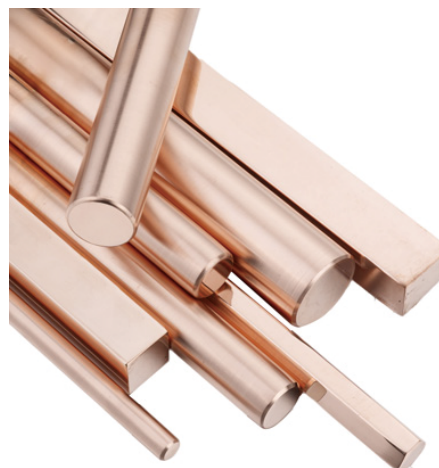
CZr0.15 (C15000)

Material Designation*

| | |
|-----|-----------------|
| UNS | C15000 |
| EN | CuZr (CW 120 C) |
| JIS | / |
| GB | TZr0.15 |

Chemical Composition

| | | |
|--------|---------|---|
| Cu | Balance | % |
| Zr | 0.1-0.2 | % |
| Others | ≤0.1 | % |



Characteristics

It has high electrical conductivity, thermal conductivity and good process performances.

Typical Application

It is applied for spot welding electrode and electrode cap, especially suitable for coating sheet. It is also suitable for components of electronic devices.

Physical Properties

| | | |
|-----------------------------------------------|------|----------------------|
| Density ^① | 8.9 | g/cm ³ |
| Melting point | 1080 | °C |
| Electrical conductivity ^① | 86 | %IACS |
| Thermal conductivity ^① | 367 | W/(m·K) |
| Coefficient of thermal expansion ^② | 17.0 | 10 ⁻⁶ / K |
| Modulus of elasticity | 129 | GPa |

Note①: Temperature for testing is 20°C.

Note②: Temperature range for testing is 20-300°C.

Fabrication Properties

| | |
|------------------------------------|-----------------|
| Cold workability | Excellent |
| Hot workability | Excellent |
| Brazing | Good |
| Resistance welding | Not recommended |
| Machinability compared with C36000 | 20% |

Mechanical Properties

| Diameter | Temper | Tensile Strength | Yield Strength | Elongation |
|-------------|--------|------------------|----------------|------------|
| mm | | MPa min. | MPa min. | % min. |
| 4 < Φ ≤ 25 | R350 | 350 | 260 | 12 |
| 25 < Φ ≤ 50 | R280 | 280 | 210 | 15 |

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Tolerance and Delivery Form

| Diameter | Tolerance ^③ | Ovality | Straight Bar | | Coil wire | |
|---------------|------------------------|---------|--------------|--------------|-----------|--------|
| | | | Length | Straightness | ID | Weight |
| mm | mm | mm | mm max. | mm/m max. | mm | kg |
| 5 ≤ Φ ≤ 6 | 0.06 | 0.03 | 4000 | 1.0 | 500 | 100 |
| 6 < Φ ≤ 10 | 0.10 | 0.05 | 4000 | 1.0 | 500 | 500 |
| 10 < Φ ≤ 20 | 0.16 | 0.08 | 4000 | 1.0 | 800 | 500 |
| 20 < Φ ≤ 25 | 0.18 | 0.09 | 4000 | 1.0 | 1000 | 1000 |
| 25 < Φ ≤ 30 | 0.20 | 0.10 | 4000 | 1.0 | -- | -- |
| 30 < Φ ≤ 40 | 0.24 | 0.12 | 4000 | 1.0 | -- | -- |
| 40 < Φ ≤ 42.5 | 0.30 | 0.15 | 4000 | 1.0 | -- | -- |

Note^③: The tolerances listed in the table are specified as all plus or all minus. When tolerances are specified as plus and minus (±), half the values given.

| | |
|---------------------------|------------------|
| Composition | BS EN 12163-2016 |
| Conductivity | BS EN 12163-2016 |
| Mechanical Properties | BS EN 12163-2016 |
| Fabrication Properties | CDA |
| Other Physical Properties | CDA |

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