

# UC500

CuCrZr

## High strength high conductivity copper alloy

UC500 is a wrought, age hardening **CuCrZr** copper alloy optimized for high strength and high conductivity requirement applications.

It exhibits an optimal combination of key properties making it an ideal material for high performance conductors in cable applications. It is non-magnetic and easy to redraw to fine wire or various stranded constructions.

In addition, UC500 is an eco-friendly, lead-free, cadmium-free and beryllium-free material.

### Key material properties:

- High Strength and High Conductivity
- High Flex Life
- Fair resistance to corrosive environments
- Good working temperature resistance up to 400°C
- Non magnetic
- Excellent plating ability

### Key physical properties

- Density: 8,94 g/cm<sup>3</sup>
- Coefficient of thermal expansion 20-200°C: 17.10<sup>-6</sup>K<sup>-1</sup>
- Relative magnetic permeability < 1,01



### General characteristics

Nominal composition (weight %) :

Zr	Cr	Copper
0,02 to 0,06	0,1 to 0,6	Balance



Environmental impact : this material can be recycled, when recycled it is not classified as hazardous waste.

### Forms & dimensions

- Wire in coils, on carriers, drums or spools
- Diameter range 0,15 mm up to 16 mm

### Standard & specifications

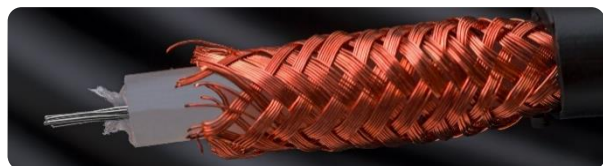
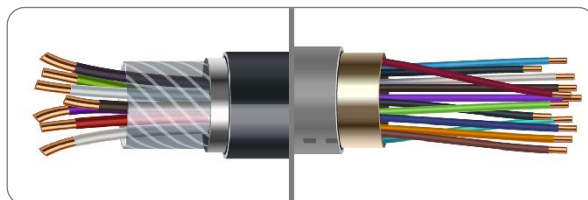
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- Thanks to our full manufacturing integration, we shorten the supply chain, effectively de-risking it, and we optimize our response time.
- Our collaboration with subsidiaries and partners gives us a worldwide distribution network.
- We exhibit long-standing expertise and a wide portfolio of high performance alloys for demanding applications.
- Our Group is well-known and approved by numerous Tier Ones and OEM's.

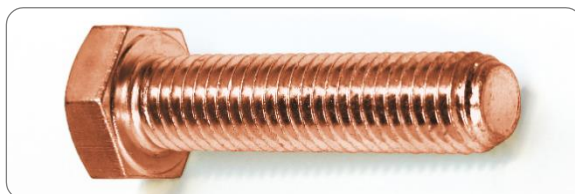
## High requirement applications

The high electrical conductivity of UC500, combined with elevated mechanical properties, make it perfectly suitable for high performance, **single-core and multi-core conductor cables**, such as aerospace, automotive and railways cables.



UC500 is also strictly amagnetic: it can be easily braided as wire around a cable core to provide **Electromagnetic shielding**.

UC500 resists to temperatures up to 400°C and can be transformed into **thermal and electrical conductive fasteners** for any high-power electrical application such as e-mobility.



With its elevated strength to conductivity ratio, **Electro Discharge Machining** wire made from UC500 can achieve outstanding cutting productivity.

## Typical mechanical properties (in most usual condition)

Young's modulus : 120 kN/mm<sup>2</sup>

Temper	Diameter (mm)	Tensile Strength (MPa)	Elongation in 4D mini (%)	Electrical Conductivity (% IACS)
Half-Hard	>5	470	13	88
		450	16	92
	<5	430-530	4-9	90-95
		530-570	2-6	84-88
Hard	<2	650	1-3	75

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Thanks to its multidisciplinary know-how, the Group provides innovative solutions to all major industries such as Aerospace, Oil & Gas, Energy, Off-highway Mining and Railways, but is also present in sectors that manufacture personal equipment.

Our 8 production sites and 850 employees master a unique range of metal processing technologies: continuous and semi-continuous casting, sand casting, chill casting (manual, mechanized, robotic), centrifugal casting, extrusion, ring rolling, hot and cold rolling, drawing, free forging, forging, die stamping, stamping, heat treatment, cold stamping, machining, non-destructive tests, etc.

Offering a solution that is suited and optimized to the needs of each industry is our Group's commitment.

Do you want to know more, discuss a project with us or make a request for quotation?  
Technical advice on how to best use this product can also be provided.