

## HIGH PERFORMANCE COPPER-NICKEL-SILICON

### TYPICAL APPLICATIONS

**Oil & Gas:** electrical connectors, bushes in subsea valves  
**Autosport/automotive:** Valve guides and seats, small end bushes, camshaft bushes

**Aerospace & defence:** electrical connectors, undercarriage components, motor shafts, heavily loaded bearings, bolting, mine detection equipment

**Mechanical & hydraulic equipment:** Hose connectors, mechanical seals, thrust pads, gears

**Manufacturing industry:** Plastics moulding dies, resistance welding electrodes

### PRODUCT DESCRIPTION

ULTIBRON-CNS is characterised as a type CuNi2Si precipitation-hardening alloy offering a unique combination of properties and performance characteristics. Mechanical properties can be enhanced by the application of cold work to the material before precipitation-hardening.

The alloy provides -

- High strength
- Excellent bearing properties/wear resistance
- Good electrical and thermal conductivity
- Very low magnetic permeability <1.001
- Spark resistance
- Full retention of impact properties to – 196°C
- Good elevated temperature properties

A CuNi3Si variant can also be supplied to order. This increase in silicon content provides a strength of up to 800 MPa and even higher wear resistance.

### CORROSION RESISTANCE

ULTIBRON-CNS provides excellent resistance to seawater, marine environment and atmospheric corrosion.

### MATERIAL SPECIFICATIONS

- BS EN 12163 CW111C
- Related specifications
- BS B25
  - DTD 498 CuNi2.5Si
  - DTD 504 (cold drawn)
  - BS 4577A Type 3/2

### AVAILABILITY

Rod, bar  
 Other forms by discussion.

### MACHINING AND JOINING

ULTIBRON-CNS can be readily machined and joined by conventional techniques.

### CHEMICAL COMPOSITION

Weight%	Ni	Si	Other	Cu
Min.	1.6	0.4		
Max.	2.5	0.8	0.3	Balance

### MINIMUM MECHANICAL PROPERTIES (<30mm diam. cold worked + aged)

UTS, MPa	640
0.2% PS, MPa	590
Elongation, %	10

### TECHNICAL SALES ASSISTANCE

Our resident team of highly qualified metallurgists and engineers will be pleased to assist further on any technical topic.

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