PHOSPHOR BRONZE

CUSN12 - CC483K

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CuSn12, often referred to as 'Gear Bronze' is a high-strength phosphor bronze with several key features that make it suitable for a variety of applications. CuSn12 (C51000) is a versatile alloy also known for good corrosion resistance and excellent machinability. Its composition and properties make it suitable for applications requiring reliability, durability, and performance in harsh environments such as marine, automotive, aerospace and industrial sectors.

KEY FEATURES

- High strength
- Good machinability
- Excellent corrosion resistance
- High wear resistance
- Can handle medium to high loads and speeds

CHEMICAL PROPERTIES

Copper (Cu)	Tin (Sn)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)	Phosphorus (P)	Iron (Fe)
84-88.5%	**10.5-13%**	**2%**	**1%**	**1%**	**0.4%**	**0.2%**

MECHANICAL PROPERTIES

Tensile strength (N/mm²)	**310-450**
Yield strength (N/mm²)	**130-300**
Elongation (% in 2 inches)	**5-25**
Hardness - Brinell (HB)	**60-95**
Hardness - Vickers (HV)	**80-110**

PHYSICAL PROPERTIES

Density (kg/m³)		**8850**
Modulus of elasticity (Gpa)		**120**
Mean coefficient of thermal expansion	0-100ºC (µm/m/ºC)	**18.5**
	0-350ºC (µm/m/ºC)	**19.7**
	0-538ºC (µm/m/ºC)	**20.6**
Thermal conductivity	at 100ºC (W/m.K)	**50**
	at 500ºC (W/m.K)	**30**
Specific Heat 0-100ºC (J/kg.K)		**377**
Electrical conductivity (IACS %)		**15-20**
Melting point (ºC)		**990**

MARKET SECTORS

Marine Equipment
Propeller shaft bearings, ship fittings, marine hardware

Electrical Industry
Contacts, connectors, switches, terminals

Engineering Components
Gears, bushings, bearings, valve seats, pump components

Automotive Industry
Bushings, bearings, valve seats, piston rings, springs

Aerospace Industry
Bearings, gears, springs, aircraft components

Construction & Architecture
Decorative hardware, sculptures, architectural fittings