

Copper Magnesium 0.2%

The addition of Magnesium to Copper produces an alloy suitable for use in the fully hard state, creating electrical conductors with a conductivity of ~75% IACS but the strength of annealed steel.

Copper Magnesium alloys were approved for use as catenary wires in transport systems during the 1990s and have continued to find new applications ever since, including in the automobile industry.

Copper magnesium is available as round solid wire, stranded wire or as rolled tape.

Physical and Mechanical Properties

Values stated are nominal or typical.

	Units	Value
Nominal composition	%	Cu – Balance Mg – 0.2 Others <0.12
Density at 20°C	g/cm ³	8.9
Resistivity at 20°C	μΩcm	2.25
Temperature Coefficient of Resistance, 20–100°C	1/K	0.00317
Coefficient of thermal expansion, 20 – 300°C	1/K	17 x 10 ⁻⁶
Thermal conductivity at 20°C	W/mK	310
Melting point (approx.)	°C	1150
Typical Tensile strength - annealed *	N/mm ²	270-340
Typical Tensile Strength – fully cold worked *	N/mm ²	≥ 600
Typical Elongation at break - annealed *	%	≥ 25
Young's Modulus (cold drawn)	GPa	120-125

* Values will vary dependant upon wire diameter.

Information contained within this technical data sheet is based upon the general experience of Scott Precision Wire Ltd and is believed to be correct at the time of issue. No warranty is given or is to be implied from the details above. Customers are advised to carry out independent tests in order to determine the suitability of any Scott Precision Wire Ltd product for an application.