

### Product description

Tin bronze alloy wire for welding similar tin bronze (phosphor bronze) alloys.

### Specifications

**AWS A5.7** (ERCuSn-C)  
**BS EN ISO 24373** S Cu 5210 / CuSn8P  
**BS 2901 Pt 3** (C11)  
**DIN 1733** (SG-CuSn6 / 2.1022)

### ASME IX Qualification

**92CuSn** QW432 F-No 33

### Materials to be welded

**Tin bronze** Up to 10%Sn+0.5%P. BS PB101-103, UNS C50100-C52400.  
**Gunmetals** BS LG3, LG4, LPB1, (but >5%Pb leaded types difficult).  
**Bell metal** Cu + 20-25%Sn.  
**Brass** Cu + 40%Zn, manganese bronze.

### Applications

This wire is used for welding a range of copper base alloys to themselves and to CMn steels or cast irons, and also for the **repair** and **joining** of **castings**.

It is also suitable, if low dilution is achieved, for weld **surfacing** to give a bearing surface and/or corrosion resistant **overlay** on **steel components**, **shafts** etc. Stainless steels should be avoided because chromium pick-up causes embrittlement.

### Microstructure

A multi phase copper base structure with complex eutectoids.

### Welding guidelines

The tin bronze weld metal tends to be sluggish because of its wide melting range. Preheating to about 200°C can help improve fluidity when welding thick sections. To avoid hot cracking it is desirable to keep the interpass temperature below 200°C.

### Composition (wire wt %)

	Cu	Sn	Pb	Al	P	Zn	Fe	Ni
min	bal	7.5	--	--	0.01	--	--	--
max	bal	8.5	0.02	0.01	0.4	0.2	0.1	0.2
typ	92	7.8	0.01	<0.01	0.1	<0.1	<0.1	<0.1

### All-weld mechanical properties

Typical as welded	TIG
Tensile strength	MPa 344
0.2% Proof stress	MPa 154
Elongation on 5d	% 58
Hardness	HV 86

### Typical parameters

	TIG
Shielding	Ar
Current	DC-
Diameter	2.4mm
Parameters	250A, 15V

### Packaging data

ø mm	TIG
1.6	2.5kg tube
2.4	2.5kg tube

### Storage

Recommended ambient storage conditions: < 60% RH, >18°C.

### Fume data

Fume composition, wt % typical (TIG fume negligible):

Fe	Mn	Cr <sup>3</sup>	Ni	Mo	Cu	OES (mg/m <sup>3</sup> )
<1	<1	<0.1	<0.1	<0.1	80	0.3