Tin/Lead Cored Solder Wires for Electronics

Besides the lead-free alloys required by the RoHS legislation TAMURA ELSOLD also offers a wide range of cored solder wires made of SnPb solder alloys, including the high-melting point soft solder alloys with lead contents > 85% which are – for the time being – still exempt from the restrictions imposed by the RoHS Directive.

The fluxes used for the production of the solder wires guarantee optimum wetting of the surface and spreading of the solder.

Areas of Use

TAMURA ELSOLD Cored Wires are used for automatic and manual soldering as well as for solder repair work in all areas of the electrical and electronic industry, especially in automotive electronics, telecommunication and general industrial electronics. As the only European manufacturer TAMURA ELSOLD is listed as approved source for 3 SnPb-type solder materials (Sn63Pb37, Sn60Pb40, Sn62Pb36Ag2) the catalogue of qualified construction materials of the ESA (European Space Agency).

The Alloys

All TAMURA ELSOLD alloys are made exclusively from carefully selected virgin base metals from first melt. The following standard alloys are supplied. Other alloys can be manufactured on special request.

Alloy Designation	Sn [%]	Pb [%]	Ag [%]	Sb [%]	Cu [%]	Density [g/cm³]	Melting point / range [°C]
Sn60Pb39Cu1	60 ± 0.5	Rem.			1.4 ± 0.2	8.9	183 – 190
Sn60Pb40	60 ± 0.5	Rem.				8.5	183 – 190
Sn63Pb37	63 ± 0.5	Rem.				8.4	183
Sn60Pb36Ag4	60 ± 0.5	Rem.	4 ± 0.2			8.5	178 – 183
Sn62Pb36Ag2	62 ± 0.5	Rem.	2 ± 0.2			8.5	178
Pb91Sn8Sb1	8 ± 0.5	Rem.		1 ± 0.3		10.6	280 – 305
Pb93Sn5Ag2	5 ± 0.2	Rem.	1.3 ± 0.3			10.8	296 – 301

Alloy tolerances, if not stated otherwise, for elements up to 5 % ± 0.2 %, over 5 % ± 0.5 %.
Impurities per EN 61190-1-3 / ISO 9453 and TAMURA ELSOLD house norms.

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The Fluxes

Type	Classification per DIN EN ISO 9454-1	61190-1-1	Halide content	No Clean	Short Description
105	2231	ORL0	-	x	Free from resin/rosin and halides, very active, low residues
ELTIN 3030	1123	ROM1	1.3 %	(x)	Activated flux, especially for solders with high lead content
ELTIN 3064	1123	ROM1	1 %	(x)	For surfaces which are difficult to solder, also suitable on nickel, brass, and bronze.
ELTIN 3066	1123	ROM1	1.5 %	(x)	Higher degree of activation than ELTIN 3064
A3	1123	ROH1	0.75 %	x	Standard Flux for soldering work with SnPb where an active flux is required (effective on brass, nickel, bronze)
C3	1131	ROL0	-	x	Halide-free flux for all electronic applications.
C3P	1131	ROL0	-	x	Plasticized version of C3
C5	1131	ROL0	-	x	Stronger activation than C3 for difficult soldering tasks, e.g. components stored for extended time periods.
FS28	1131	REL0	-	x	Strongly activated, halide-free flux for difficult soldering tasks with reduced rosin content and low residues.
H	2131	ORM0	-	x	Urea-based, very effective flux without addition of rosin, e.g. for the production of transformers or capacitors
K	1111	ROL0	-	x	Non-activated rosin. For easy-to-solder surfaces with highest demands on reliability.

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Available Alloy / Flux Combinations with Relevant Flux Content

(Tolerances of the flux content meet the requirements of norm EN ISO 12224-1)

	105	ELTIN 3030	ELTIN 3064	ELTIN 3066	A3	C3	C3P	C5	FS28	H	K
Sn60Pb39Cu1	0.7% 1.5%		1.4% 2.2%	2.2%	1.5% 2.5% 3.5%	1.5% 2.5% 3.5%	1.5% 3.5%		1.0%	3.5%	
Sn60Pb40			2.2%		2.5%	1.5% 2.5% 3.5%		1.25%			3.5%
Sn63Pb37			2.2%			2.5% 3.5%				2.0% 2.5%	3.5%
Sn60Pb36Ag4			1.4% 2.2%			3.5%					
Sn62Pb36Ag2			2.2%	2.2%		1.5% 2.5% 3.5%	3.5%				3.5%
Pb91Sn8Sb1					2.5%	2.5%			1.0%		
Pb93Sn5Ag2		2.2%									

The table shows the combinations which are at present in frequent use. In case of sufficient demand other combinations are possible at any time. Please ask your sales agent or contact our sales department.

Core Design

The cored wires are normally available in single core versions. Multi-core versions (3) are available upon special request.

Diameter and Tolerances

(per EN ISO 12224-1)

Diameter [mm]	Tolerance [mm]
0.30	± 0.03
0.50	± 0.05
0.75	± 0.05
1.00	± 0.05
1.20	± 0.05
1.50	± 0.05

Spool Dimensions [mm]

	250 - 500 g Spool	1000 g Spool
Flange Diameter	69.5	70
Barrel Diameter	33.5	33
Bore	30	30
Total Width	41.5	78
Traverse Width	38	68

Shelf Life

We guarantee a minimum shelf life of 36 months if the material is stored properly in a clean environment. In many cases the cored wires can be used without problems beyond the guaranteed shelf life. However, the user should check this under his own responsibility by making appropriate trials.

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Packing Units

Spools of	250 g – 500 g – 1000 g	Colour of Spools:	Teal (500 g / 1000 g)
	2.5 kg		Black (2.5 kg)
	4.0 kg		Black (4 kg)
	5.0 kg		Wood (5 kg)
	10.0 kg		Black (10 kg)
	25.0 kg		Black (25 kg)

Safety and Health

For safety and health information please refer to the relevant material safety data sheets.

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