



ELSOLD manufactures a wide range of flux-cored wires for the manual and automatic soldering processes to assist the user in the transition from SnPb to lead-free solders. The fluxes used – on the basis of natural rosin, synthetic resins, or organic substances – facilitate the wetting of the surface to be soldered and improve the spreading of the solder which, for physical reasons, is worse for lead-free solders than it has been for SnPb solders. The right combination of activators of ELSOLD Cored Wires guarantees a wide process window due to a high level of activity paired with a very low risk of corrosion.

■ Areas of Use

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 ELSOLD is listed as approved source for Sn94Ag4 (ELSOLD brand name TS40) in the catalogue of qualified construction materials of the ESA (European Space Agency).

■ The Alloys

All 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.

Standard ELSOLD Lead-free Alloys

Alloy Designations	Sn %	Ag %	Cu %	Sonstige	Density (g/cm ³)	Melting Point / Range °C
TC07	99,3	0	0,7		7,32	227
FLOWTIN® TC07 *)	99,3	0	0,7	Traces of Co, Ni	7,32	227
TC30	97,0	0	3,0		7,35	230 - 250
TS30	97,0	3,0	0		7,35	221 - 240
TS35	96,5	3,5	0		7,35	221
TS40	96,0	4,0	0		7,38	221 - 238
TSC3005	96,5	2,8 - 3,0	0,5		7,37	217 - 219
TSC3507	95,8	3,5	0,7		7,40	217 - 219
TSC2807	96,5	2,8	0,7		7,37	217 - 220
W2	94,88	5,0	0	0,12% Indium	7,40	220 - 235

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 ELSOLD house norms.

- TC07: Low-Cost lead-free solder, suitable for a wide range of applications. Eutectic solder.
- FLOWTIN® TC07: Micro-alloyed version of TC07, protects soldering tips, reduced Cu-leaching, shiny appearance
- TC30: Temperature-resistant tin copper version with good creep resistance
- TS35: Eutectic tin silver alloy with proven reliability
- TS40: Only lead-free alloy approved by ESA (European Space Agency)
- TSC3005: The standard tin-silver-copper (TSC) alloy
- W2: Temperature-stable solder with high creep strength and high resistance against centrifugal forces.

■ The Fluxes

Typ	Classification per DIN EN		Halide content	No clean	Short description
	29454	61190-1-1			
105-19	2.2.2	ORM1	< 2,0%	X	Very low residues. Excellent for automatic soldering.
A3	1.1.2	ROH1	0,75%	(X)	For applications requiring active fluxes (effective on brass, nickel, bronze)
B1	1.1.2	REL1	< 0,5%	X	Developed in particular for lead-free SnAgCu solders. Very good spreading.
C3	1.1.3	ROM0	-	X	Halide-free flux for all electronic applications.
C3-M2	1.1.3	ROLO	-	X	Reduced spattering version of C3 with ROLO classification
E1	1.1.3	ROLO	-	X	Good temperature stability and very low spattering
ELTIN 3064 BF	1.1.2	ROM1	1,15%	(X)	For surfaces which are difficult to solder, also suitable on nickel, brass, and bronze.
ELTIN 3066 BF	1.1.2	ROM1	1,68%	(X)	Higher degree of activation than ELTIN 3064 BF
H	2.1.3	ORM0	-	X	Urea-based, very effective flux without addition of rosin, e.g. for the production of transformers or capacitors
K	1.1.1	ROLO	-	X	Non-activated rosin. For easy-to-solder surfaces with highest demands on reliability.
T	2.2.2	ORM1	< 2%		For strongly oxidised surfaces, rosin-free, halide-activated. Is used e.g. in the production of light bulbs

■ Available Alloy / Flux Combinations with Relevant Flux Content

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

	105-19	A3	B1	C3	C3-M2	E1	ELTIN 3064BF	ELTIN 3066BF	H	K	T
TC07	1,4%	2,5%	1,4%	2,5%			1,4% 2,2% 3,3%	1,4%	2,0%		
FLOWTIN® TC07 *)						2,5%	2,2%				
TC30		2,5% 3,5%		3,5%				2,2%			
TS30											2,0% 3,0%
TS35		1,5%					2,2%				
TS40				2,5% 3,5%						3,5%	3,0%
TSC3005				1,5% 2,5% 3,5%		2,5%	0,5% 2,2% 3,3%	2,2%			
TSC3507		2,5%	1,4%	2,5%	2,5%		2,2%				
TSC2807							2,2%				
W2		3,5%									

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

	250 g Spool	500 g Spool	1000 g Spool
Flange Diameter	69 mm	69,5 mm	70 mm
Barrel Diameter	33,5 mm	33,5 mm	33 mm
Bore	30 mm	30 mm	30 mm
Total Width	21 mm	21 mm	78 mm
Traverse Width	18 mm	41,5 mm	68 mm

Bigger spools (e.g. 2, kg / 4 kg) are available on special request.

■ Shelf Life

We guarantee a minimum shelf life of 12 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.

■ Safety and Health

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

*) FLOWTIN® is a registered trademark of Stannol Wuppertal. The alloy is manufactured and sold by ELSOLD under a licence from Stannol.

Important information: The above information was put together based on the data available to the producer at the time of print. The technical data contained herein are consistent with the properties of the material but should not be used for the preparation of specifications as it is intended for reference only.