



STANNOL®

Wenn's ums Löten geht
When it's about soldering
Quand il s'agit du soudage

! NEW!

Technical Data Sheet

STANNOL® FLOWTIN® TSC

New Lead-Free Solder Alloy for Electronic Application

- Eutectic Solder (melting point at 217°C)
- Good wetting performance
- Fine grain and smooth surface better than ECOLOY® TSC (Sn95.5Ag3.8Cu0.7)
- Reduced dissolution of substrate metal compared to ECOLOY® TSC
- Easy disposal – no lead containing waste

Application

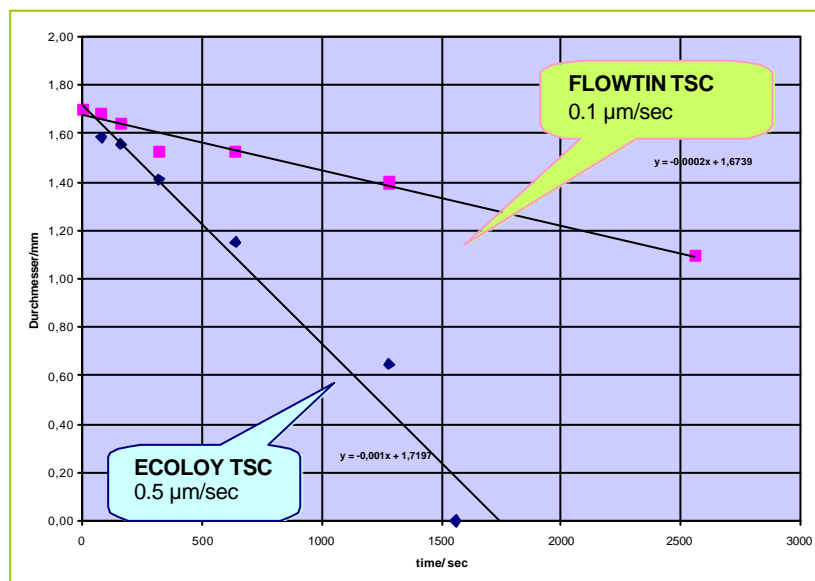
STANNOL® FLOWTIN® TSC was designed to eliminate the use of lead containing solders in electric and electronics manufacturing. Like with ECOLOY® TSC solder it is necessary to adjust machine settings, temperature profiles, and other parameters to the requirements of a lead free process. But there is nothing to do when switching from ECOLOY® TSC to FLOWTIN® TSC, all settings and parameters remain the same. The properties of the solder joints are at least comparable or even better than tin lead.

The physical properties of FLOWTIN® TSC do not change compared to common tin/silver/copper solder. But there are differences between ECOLOY® TSC and FLOWTIN® TSC with micro additives.

- The solder joint solidifies as fine grain metal; therefore the surface is shinier
- The dissolution of substrate metal is reduced
- The service life of solder is extended baths due to lower copper enrichment

Product Range

STANNOL® FLOWTIN® TSC is available as solder bars and solder wire



Radial dissolution of copper wire in FLOWTIN® TSC solder bath @300°C

The above values are typical and represent no form of specification. The Data Sheet serves for information purposes. Any verbal or written advise is not binding for the company, whether such information originates from the company offices or from a sales representative. This is also in respect of any protection rights of third parties, and does not release the customer from the responsibility of verifying the products of the company for suitability of use for the intended process or purpose. Should any liability on the part of the company arise, the company will only indemnify for loss or damage to the same extent as for defects in quality.



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Physical and Mechanical Properties of ECOLOY® and FLOWTIN® solders compared with Sn63Pb37:

Properties	S-Sn63Pb37	STANNOL® ECOLOY TSC (Sn95,5Ag3,8Cu0,7)	STANNOL® ECOLOY® TS (S-Sn96Ag4)	STANNOL® ECOLOY® TC (S-Sn99Cu1)	STANNOL® FLOWTIN® TSC
Melting Point /°C	183	217	221	227	217
electrical Conductivity %IACS	11.9	13	14	-	-
electrical resistivity / $\mu\Omega$ cm	14.5	13	12.3	-	-
Brinell Hardness, HB	17	15	15	-	-
Density /g cm ⁻³	8.4	7.5	7.5	7.3	7.5
Tensile strength, (20°C) / N mm ⁻²					
at 0.004 s ⁻¹ Shear rate	40	48	58	48	-
Shear Strength N mm ⁻² at 0.1mm ⁻¹ , 20°C	23	27	27	23	27
at 0.1mm ⁻¹ , 100°C	14	17	17	16	16
Creep Resistance* N mm ⁻² 20°C	3.3	13.0	13.7	13.7	13
100°C	1.0	5.0	5.0	5.0	5.0

Recommended Conditions of Use

Wave soldering

The recommended operation conditions for wave soldering are the same like normal ECOLOY® TSC solders, since the melting point remains the same.

Purity

Like Sn95.5Ag3.8Cu0.7 according to DIN EN 61190-1-3 and DIN EN 29453 / ISO 9453, but with micro-additive <0.1%

Delivery Forms

STANNOL® FLOWTIN® TSC is available as bars and sticks for wave soldering, or as wire for rework and repair application as well as for robotic processes.

Health and Safety

Information about Health and Safety and Disposal of used products can be found in our safety data sheet, which is available on request.

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