



## **SOLDER FLOWTIN TSC**

New Lead-Free Solder Alloy for Electronic Application

### **DESCRIPTION**

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Stannol Flowtin TSC was designed to eliminate the use of lead containing solders in electric and electronics manufacturing.

### **CHARACTERISTICS**

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**This product offers the following advantages:**

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

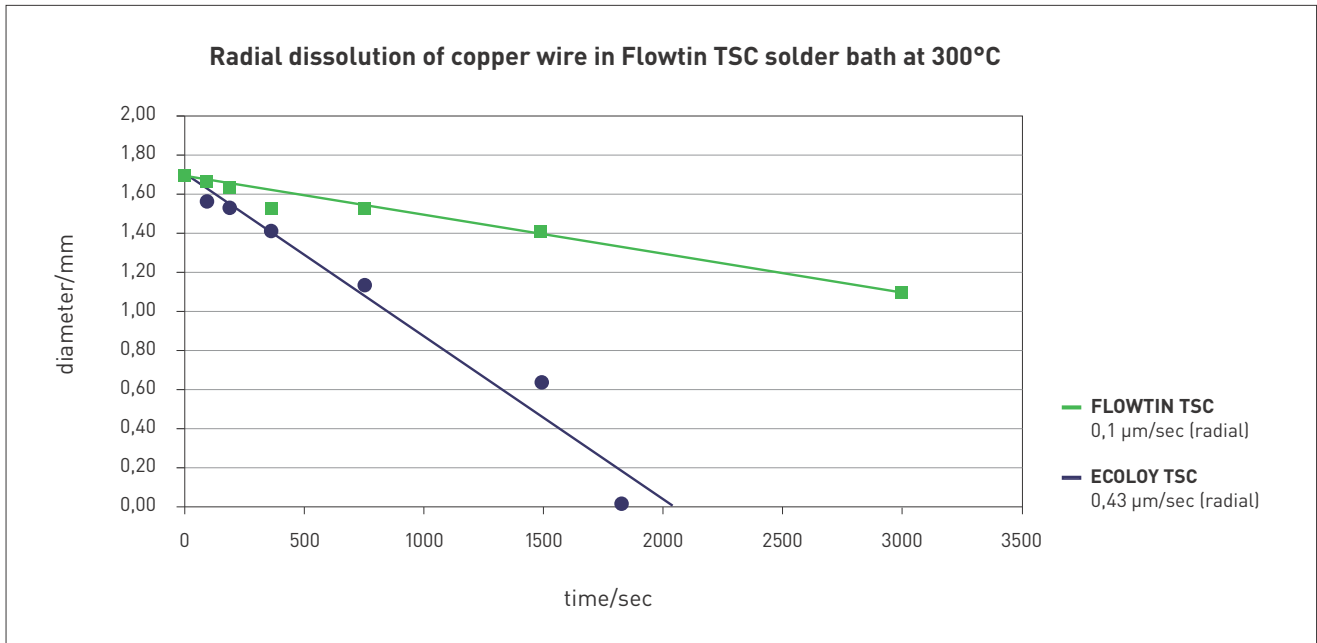
### **APPLICATION**

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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 baths is extended due to smaller copper enrichment**



**PHYSICAL PROPERTIES AND DATA OF ECOLOY AND FLOWTIN SOLDERS COMPARED TO S-Sn63Pb37**

GENERAL PROPERTIES	S-Sn63Pb37***	STANNOL ECOLOY TSC (S-Sn95.5Ag3.8Cu0.7)**	STANNOL ECOLOY TS (S-Sn96.3Ag3.7)***	STANNOL ECOLOY TC (S-Sn99.3Cu0.7)***	STANNOL FLOWTIN TSC (S-Sn95.5Ag3.8Cu0.7)****
<b>Melting point, °C:</b>	183	217-223	227	217	<b>217</b>
<b>Electrical Conductivity, %IACS:</b>	11.9	13	15.6	13	---
<b>Electrical Resistivity, µΩcm:</b>	14.5	13	12.6	13	---
<b>Brinell Hardness, HB:</b>	17	15	9	15	---
<b>Density, g/cm³:</b>	8.4	7.5	7.3	7.5	<b>7.5</b>
<b>Tensile Strength, (20°C) / N mm<sup>-2</sup> at 0.004 s<sup>-1</sup> Shear Rate:</b>	40	48	58	48	---
<b>Shear Strength* N mm<sup>-2</sup> at 0.1mm<sup>-1</sup>, 20°C:</b>	23	27	27	23	<b>27**</b>
<b>at 0.1mm<sup>-1</sup>, 100°C:</b>	14	17	17	16	<b>17**</b>
<b>Creep Resistance N mm<sup>-2</sup> 20°C:</b>	3.3	13.0	13.7	13.7	<b>13**</b>
<b>100°C:</b>	1.0	5.0	5.0	5.0	<b>5.0**</b>

\* Shear Stress for 103 h time to failure, References: IDEALS Interim data comparable to Ecoloy TSC (S-Sn95.5Ag3.8Cu0.7)

\*\* Interim data comparable to Ecoloy TSC (S-Sn95.5Ag3.8Cu0.7)

\*\*\* Complying with DIN EN ISO 9453

\*\*\*\* Complying with DIN EN ISO 9453 with micro additives <0.1%.

## **RECOMMENDED CONDITIONS OF USE**

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**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**

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

## **SUPPLY FORMS**

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Solder Wire (solid and flux cored)  
Triangular bars  
Kg-bars  
Ingots with hanging hole

## **HEALTH AND SAFETY**

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Before using please read the material safety data sheet carefully and observe the safety precautions described.

## **NOTICE**

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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.