SOLDER FLOWTIN TC

New Lead-Free Solder Alloy for Electronic Application

DESCRIPTION

Stannol Flowtin TC solders have been designed to eliminate the use of lead containing solders in electric and electronics manufacturing.

CHARACTERISTICS

Flowtin TC offers the following advantages:

- **eutectic Solder (melting point at 227°C)**
- **good wetting behaviour**
- **fine grain and smooth surface better than Ecoloy TC (S-Sn99.3Cu0.7)**
- **reduced dissolution of substrate metal compared with Ecoloy TC (S-Sn99.3Cu0.7)**
- **easy disposal – no lead containing waste**

APPLICATION

Like with Ecoloy TC 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 TC to Flowtin TC, 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 TC do not change compared to common tin/copper solder. But there are differences between Ecoloy TC and Flowtin TC 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**

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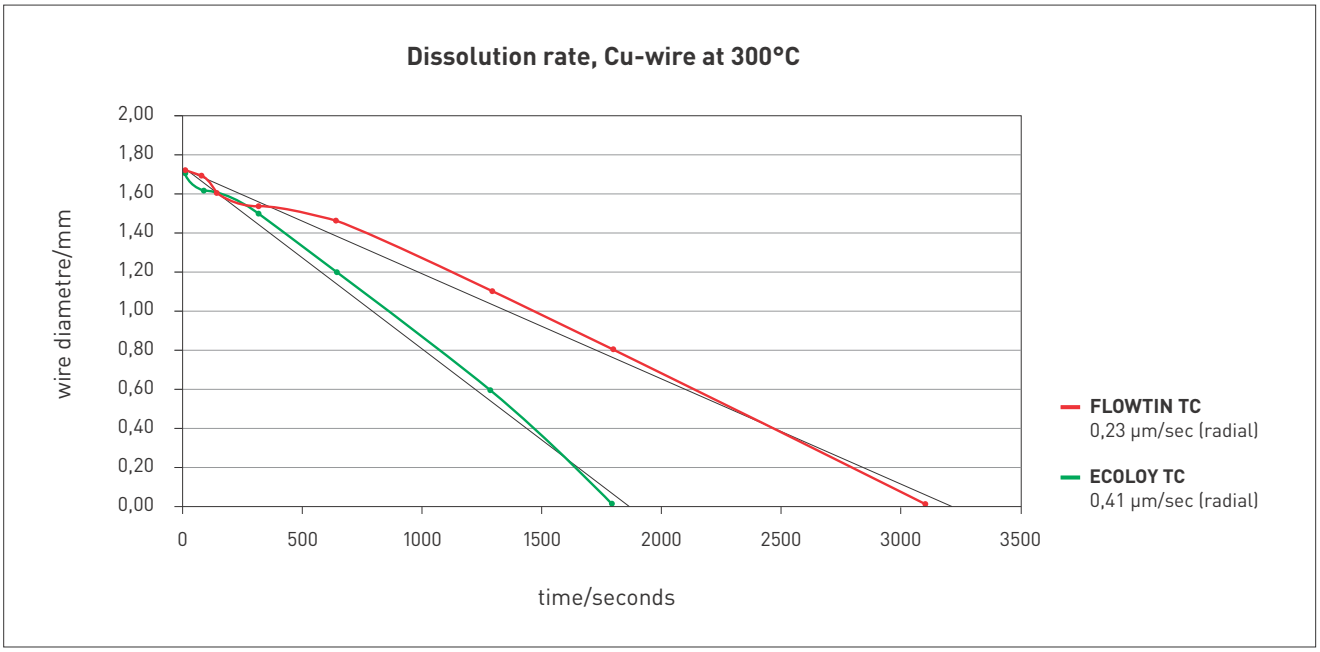

Radial dissolution of copper wire in Flowtin TC solder bath @300°C

GENERAL PROPERTIES OF ECOLOY AND FLOWTIN SOLDERS COMPARED WITH 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 TC (S-Sn99.3Cu0.7)**
Melting Point, °C:	183	217	221	227	**227**
Electrical Conductivity %IACS:	11.9	13	14	15.6	**–**
Electrical Resistivity, µΩcm:	14.5	13	12.3	12.6	**–**
Brinell Hardness, HB:	17	15	15	9	**–**
Density, g/cm³:	8.4	7.5	7.5	7.3	**7.3**
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	**23**
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	**8.6**
100°C:	1.0	5.0	5.0	5.0	**2.1**

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

RECOMMENDED CONDITIONS OF USE

Wave soldering: The recommended operation conditions for wave soldering are the same like normal Ecoloy TC solders, since the melting point remains! Stannol's patented alloy FLOWTIN TC does not require different flux systems compared to a standard Sn99Cu1 alloy.

PURITY

Like Sn99.3Cu.7 according to DIN EN 61190-1-3 and S-Sn99.3Cu0.7 according to DIN EN ISO 9453, but with micro-additive <0.1%.

SUPPLY FORMS

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

HEALTH AND SAFETY

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

NOTICE

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