



SOLDER FLOWTIN TSC305

Lead-free alloy for electronics

DESCRIPTION

Stannol Flowtin TSC305 was developed as a new alloy to eliminate the use of traditional tin/lead alloys in the existing production processes in electronics manufacturing.

CHARACTERISTICS

- **The product offers the following advantages:**
- **Near Eutectic alloy (melting range at 217°C-220°C)**
- **Good wetting properties**
- **Cost savings compared to the eutectic Sn/Ag/Cu alloy**
- **by reduced silver content**
- **Reduced deposition rate compared to Ecology TSC (S-Sn95.5Ag3.8Cu0.7)**
- **With all Stannol Flowtin alloys no problematic disposal of leaded waste**

APPLICATION

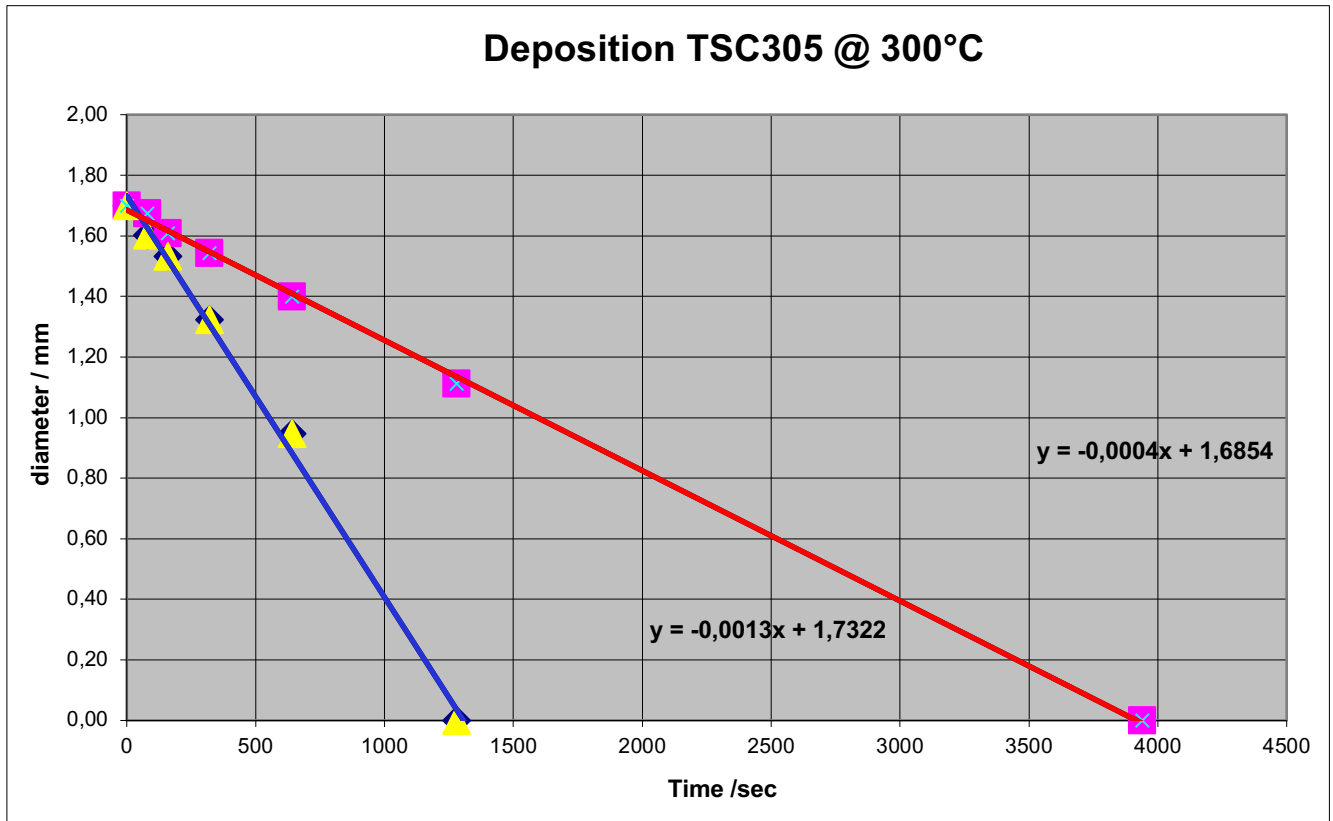
As with the Ecology TSC305 alloy, the temperature profiles of the production equipment must be adjusted when switching from leaded to lead-free processes. When switching from Ecology TSC305 to Flowtin TSC305 the settings remain the same! The properties of the resulting solder joints will be comparable or better in all points with solder joints made with Sn/Pb solders.

The physical properties are not changed by the microalloy additions. The differences between Ecology TSC305 and Flowtin TSC305 are:

- **in the solidification of the solder joint, which is finer grained and therefore smoother**
- **in the reduced deposition, whereby far less copper is removed**
- **in the extended service life of solder baths due to lower copper enrichment**

PRODUCT AREA

Stannol Flowtin TSC305 is a lead-free alloy of the system tin/silver/copper with micro-alloy additives. TSC305 is now the most widely used lead-free alloy for soldering, compatible with other lead-free solders. Flowtin offers the additional advantage of reduced copper alloying and also material protection on soldering machines and equipment.



TSC305 **TSC305ML**

GENERAL PROPERTIES OF ECOLOY AND FLOWTIN ALLOYS COMPARED TO S-Sn63Pb37

GENERAL PROPERTIES	S-Sn63Pb37*	STANNOL ECOLOY TC (S-Sn99,3Cu0,7)*	STANNOL ECOLOY TSC (S-Sn95,5Ag3,8Cu0,7)*	STANNOL ECOLOY TSC305 (S-Sn96,5Ag3Cu0,5)*	STANNOL FLOWTIN TSC305 (S-Sn96,5Ag3Cu0,5)**
Melting point, °C:	183	227	217	217-220	217-220
Electrical Conductivity, %IACS:	11.9	15.6	13	13	
Electrical Resistivity, μΩcm:	14.5	12.6	13	23	
Brinell Hardness, HB:	17	9	15	15	
Density, g/cm³:	8.4	7.3	7.5	7.5	7.5

* Complying with DIN EN ISO 9453:2014

** Complying with DIN EN ISO 9453:2014, additionally doped by microalloy additions <0.05%

RECOMMENDED CONDITIONS FOR USE

Wave soldering: The recommended application conditions for wave soldering are the same as for normal Ecoloy TS305 alloys, as the melting point remains the same! The use of inert gas on the wave or in the tunnel is recommended.

PURITY

Sn96,5Ag3Cu0,5 according to ISO 9453:2014 DIN EN 61190-1-3 and with microalloy additives <0.05%.

SUPPLY FORMS

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

HEALTH AND SAFETY

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

NOTICE

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.