

# SOLDER FLOWTIN TSC0807

New Lead-Free Alloy for Electronic Application

## DESCRIPTION

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Stannol Flowtin TSC0807 (Sn98.5Ag0.8Cu0.7) is a RoHS compliant lead free alloy of the system tin/silver/copper.

Flowtin TSC0807 is a second generation lead-free alloy. It provides an improved lead-free soldering process compared with SnCu and SnCuNi-alloys. This alloy can be used to replace higher silver containing alloys without losing the advantages of the silver content alloy.

Using the Flowtin TSC0807 reduces the metal costs compared with standard alloys like TSC/SAC305 and TSC/SAC387 significantly. It helps maintaining high quality solder joints and reducing manufacturing costs at the same time.

## CHARACTERISTICS

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This product offers the following advantages:

- Tin-Silver-Copper alloy (melting range at 217-226°C)
- Low silver content, saves costs compared to eutectic or near eutectic tin/silver/copper alloys
- Good wetting performance - better than Sn-Cu base alloy
- Fine grain surface, no shrinking holes
- Reduced copper leaching compared to Flowtin TC

## APPLICATION

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Very often it is necessary to adjust machine settings, temperature profiles and other parameters to the requirements of a lead free process. If changing from a tin/copper alloy all parameter settings can be the same, no changes are required.

Another huge advantage is that tin/copper alloys like Ecoloy or Flowtin TC can be upgraded easily to a TSC0807 alloy. And this can be done without the requirement for a change of the solder bath. Details can be found on the technical data sheet **Stannol Flowtin Upgrade Alloy**.

The properties of the solder joints are at least comparable or even better than conventional lead free solder joints.

The physical properties do not change by adding micro additives. There are differences between **Flowtin TC** and **Flowtin TSC0807**:

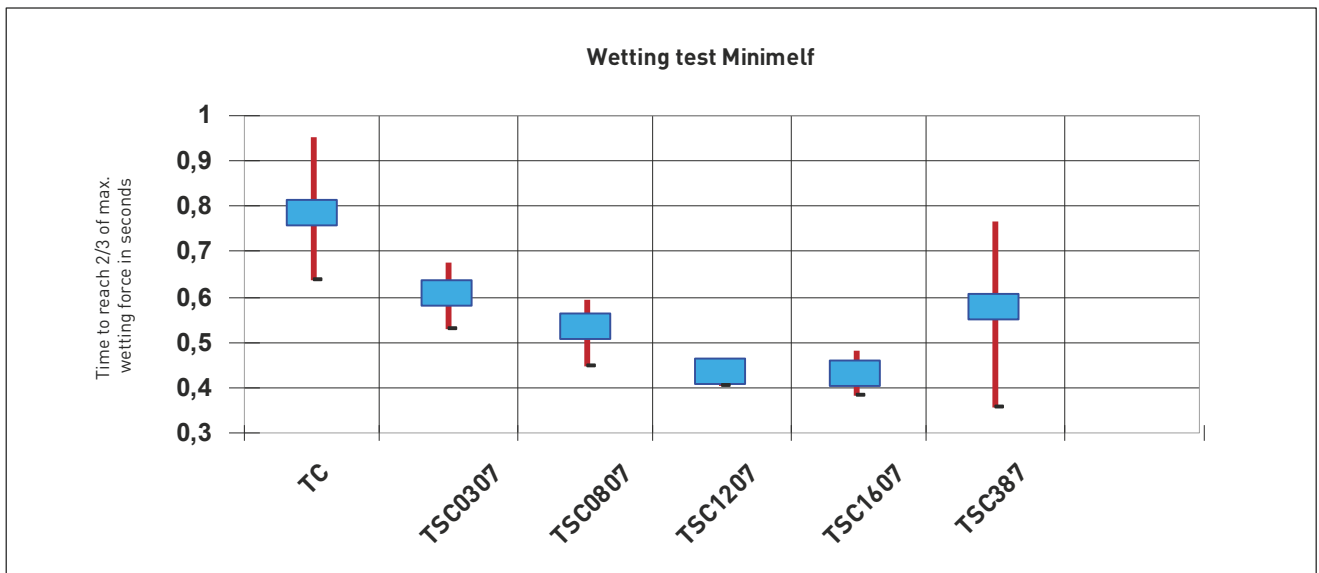
- Better wetting of component leads and pads
- Improved process performance, soldering defects will be reduced
- Lower dissolution rate of substrate metal (copper)
- Longer service life of solder bath due to less contamination
- Decrease of melting range (solidus 217°C)

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

Properties	S-Sn63Pb37*	Stannol Ecoloy TSC (S-Sn95.5Ag3.8Cu0.7)*	Stannol Ecoloy TC (S-Sn99.3Cu0.7)*	Stannol Flowtin TC (S-Sn99.3Cu0.7)**	Stannol Flowtin TSC0807 (Sn98.5Ag0.8Cu0.7)**
Melting Point, °C Melting Range, °C	183	217	227	227	217-226
Electrical Conductivity %IACS	11.9	13	15.6	15.6	14
Electrical Resistivity, $\mu\Omega\text{cm}$	11.9	13	15.6	15.6	14
Brinell Hardness, HB	17	15	9	9	16
Density, $\text{g/cm}^3$	8.4	7.5	7.3	7.3	7.3

\* 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 as normal **Ecoloy TC** and **Flowtin TC** solders. Soldering bath temperatures from 255-270°C are possible. When using this alloy in selective soldering processes, higher temperatures may be applicable.

## PURITY

Maximum impurities according to DIN EN ISO 9453, but with the addition of micro-additives in amounts of <0.1%.

## SUPPLY FORMS

Solder Wire (solid and flux cored)  
 Triangular bars  
 Kg-bars  
 Ingots with open or closed 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.