



STANNOL®

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

Technical Data Sheet

STANNOL® Solder FLOWTIN+ TC

New Micro Alloyed Lead-Free Solder for Electronic Application

- Advanced solder for wave soldering
- Less dross formation
- Less solder bath maintenance
- Avoids oxide related soldering defects
- Eutectic solder (melting point at 227 °C)
- Operates best at 260-270°C solder bath temperatures

Description

STANNOL® FLOWTIN+ TC is a solder alloy on basis of tin/copper Sn99Cu1 and has been developed from FLOWTIN® TC to avoid or minimize dross formation on solder bath surfaces when operated on air. As soldering under nitrogen is also not totally free of oxygen, the solder surface stays longer clean with **FLOWTIN+ TC**.

Application

Switching from any lead-free solder to **FLOWTIN+** all operating conditions can be set to the same level as it would be appropriate for tin-copper solder. Physical Properties don't change by micro-addition of elements to prevent copper dissolution and additives for dross prevention.

There are some differences between common **ECOLOY® TC** and advanced **FLOWTIN+ TC**:

- Solidification of the solder joint with fine grain structure
- Smooth and shiny surface.
- Reduced copper dissolution
- Prolonged lifetime of solder bath
- **FLOWTIN+** prevents tarnishing of the solder surface and prevents dross formation
- Less soldering defects
- Far less maintenance of soldering equipment.



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

Properties	S-Sn63Pb37*	STANNOL® ECOLOY® TC (S-Sn99Cu1)*	STANNOL® FLOWTIN® TC (Sn99Cu1)**	STANNOL® FLOWTIN+ TC (Sn99Cu1)**
Melting Point, °C	183	227	227	227
Electrical Conductivity, %IACS	11,9	-	15,6	15,6
Electrical Resistivity, μΩcm	14,5	-	12,6	12,6
Brinell Hardness, HB	17	-	9	9
Density, g/cm ³	8,4	7,3	7,3	7,3

* Complying with ISO 9453:2006

** Complying with ISO 9453:2006 with micro additives <0,05%

Recommended Conditions of Use

Wave soldering

The recommended operation conditions for **FLOWTIN+ TC** in wave soldering are the same like normal **ECOLOY® TC**, as the melting point (227°C) remains unchanged. Optimum operating temperatures are about 265°C, while the optimum effectiveness of **FLOWTIN® TC** is at higher temperatures >270°

Purity

Like S-Sn99Cu1 according to DIN EN 61190-1-3 and ISO 9453:2006, but with micro-additive <500ppm and desoxidation-additive.

Supply forms

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.

The mentioned 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.