FLOWTIN+ TSC105

Micro Alloyed Lead-Free Solder for Electronic Application

DESCRIPTION

Stannol Flowtin+ TSC105 is a solder alloy on the base of tin/silver/copper Sn98.5Ag1.0Cu0.5 and has been developed from Flowtin TSC105 to reduce dross formation on solder bath surfaces when used in standard atmosphere. A dross reduction up to 50% is achievable. As soldering under nitrogen is never totally free of oxygen, too, the solder surface stays longer clean with Flowtin+ TSC105 and dross formation can be further reduced.

CHARACTERISTICS

Flowtin+ TSC105 offers the following advantages:

- **Advanced solder for wave soldering**
- **Less dross formation**
- **Less solder bath maintenance**
- **Avoids oxide related soldering defects**
- **Melting range 217 - 227 °C**
- **Low silver content, reduces cost compared to TSC/SAC305 alloys**

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-silver solders. 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 TSC105 and the advanced Flowtin+ TSC105:

- **Solidification of the solder joint with finer grain structure**
- **Reduced copper dissolution**
- **Prolonged lifetime of solder bath,**
- **Flowtin+ prevents tarnishing of the solder surface and prevents dross formation**
- **Less soldering defects**
- **Less maintenance of soldering equipment**

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PHYSICAL PROPERTIES AND DATA

GENERAL PROPERTIES	S-Sn63Pb37*	STANNOL ECOLOY TSC105 (S-Sn98.5Ag1Cu0.5)*	STANNOL FLOWTIN TSC105 (S-Sn98.5Ag1Cu0.5)**	STANNOL FLOWTIN+ TSC105 (S-Sn98.5Ag1Cu0.5)***
Melting Point, °C:	183	217-224	217-224	**217-224**
Electrical Conductivity, %IACS:	11.9	13	13	**13**
Electrical Resistivity, µΩcm:	14.5	13	13	**13**
Density, g/cm³:	8.4	7.3	7.3	**7.3**

* Complying with DIN EN ISO 9453, alloy 716

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

*** Complying with DIN EN ISO 9453, with micro additives <0.05% and desoxidation-additive

RECOMMENDED CONDITIONS OF USE

Wave and selective soldering: The recommended operating temperature for Flowtin+ TSC105 in wave solder equipment is the same like standard Ecoloy TSC105, as the melting range (217-225°C) remains unchanged. Optimum operating temperatures for waves are between 265-275°C, for selective soldering equipment the solder bath temperature can be set to 280-320°C. We highly recommend to keep the operating temperatures always as low as possible to avoid consumption of the anti oxidant and reduce dross formation to the lowest possible level. If possible, increase the preheat temperatures instead of the solder bath temperatures for better soldering results.

PURITY

We manufacture this alloy according to the alloy number 716 in DIN EN ISO 9453, but with micro-additives of <0.05% and desoxidation-additives. The desoxidation level needs to be monitored and maintained by adding SnGe pellets on a regular base. The amount or required pellets depends on various process parameters. Please contact us if you require more information.

SUPPLY FORMS

- **Massive solder wire**
- **Triangular bars**
- **Kg-bars**
- **Ingots with hanging hole (open and closed)**
- **Other forms can be made available upon request, minimum order quantities may apply**

HEALTH AND SAFETY

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

NOTICE

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