

# ALPHA<sup>®</sup> SnCX-FT07, SACX<sup>®</sup> 0307-FT, SnCu3-FT

Family of Lead-Free Solder Alloys for High Temperature Dipping / Tinning Applications

## DESCRIPTION

**ALPHA SnCX-FT07, SACX0307-FT, SnCu3-FT** are lead-free alloys suitable for in high temperature dipping and lead tinning applications. They are suitable to be adopted under high temperature process > 350 °C. These alloys have been engineered to maintain a highly reflective solder surface with a very minimal surface oxide layer formation after long hours of high heat exposure, as compared to the generic alloys such as SnCu0.7 and SnCu3 alloys. The superior wetting performance of these alloys along with reduced pot maintenance due to low dross rates help improve production yield.

The SnCX-FT00 and SACX0300-FT variants are used as replenishment alloys in solder baths with elevated copper levels. As with all ALPHA bar solder, Alpha's proprietary Vaculoy<sup>®</sup> manufacturing process is used to remove certain impurities, particularly oxides. The product is further enhanced with the addition of other elements designed to further improve alloy physical and mechanical properties, reduce drossing, increase wetting speed and force and improve joint reliability.

## FEATURES & BENEFITS

### Features:

- **YIELD:** Excellent production yields. Outperforms Sn99.3Cu0.7 and Sn97.0Cu3.0 based materials.
- **DROSS GENERATION:** Lowest in class due to the addition of a special dross reducing agent in conjunction with the Vaculoy process.

### Benefits:

- Lowers Total Cost of Ownership due to lower material cost, high yields, and low dross generation.
- Provides good coating quality on component leads due to good wettability and low oxidation.

The proprietary Vaculoy process is a highly effective method for removing included oxides from solder. This is extremely important because included oxides generate excessive drossing and increase the viscosity of the solder. Solder with higher viscosity can result in increased soldering defects (i.e solder bridging).

## APPLICATION GUIDELINES

Alpha's high temperature dipping alloys are suitable for high temperature (> 350 °C) dipping and lead tinning processes.

Care must be observed in the use of these alloys as they have high Cu erosion rates (ex. SnCu3-FT) at elevated temperatures.

In general:

- If a user is generally satisfied with the performance of their current alloy but desire lower surface oxides, they should transition to the corresponding Alpha FT alloy (example – using SnCu0.7, switch to ALPHA SnCX-FT07).
- When soldering unprotected fine / thin leads with extended solder contact times, and copper erosion is a concern, the ALPHA SnCu3-FT is recommended.

## TECHNICAL DATA

Complies with all requirements of RoHS Directive (Article 4.1 of the European Directive 2011/65/EU). Alloy specification for Maximum Lead (Pb) Content = **0.05%**.

Material Property	Units	SnCX-FT07	SACX0307-FT	SnCu3-FT
Solidus	Celsius	227.6	217.5	226.9
Liquidus	Celsius	230.6	232.1	304.1
Density	g/cm <sup>3</sup>	7.33	7.30	7.41
Thermal Conductivity	W/mK	37.4	34.6	59.4
Tensile Stress	MPa	38.18	40.78	47.31
Yield Stress	MPa	21.67	28.40	31.01
Elongation	%	41.36	41.93	28.75

## AVAILABILITY

ALPHA SnCX-FT07, SACX0307-FT, SnCu3-FT are available in 1kg (2.2lb) bar, chunks, feeder ingots and autofeed wire.

**RECYCLING SERVICES**

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams. Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



**SAFETY & WARNING**

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at [MacdermidAlpha.com/assembly-solutions/knowledge-base](http://MacdermidAlpha.com/assembly-solutions/knowledge-base).**

**STORAGE**

Store the solder bar in a cool, dry and non-corrosive environment. Wrap up the solder bar when not in use to reduce exposure to environment.

**CONTACT INFORMATION**

**To confirm this document is the most recent version, please contact [Assembly@MacDermidAlpha.com](mailto:Assembly@MacDermidAlpha.com)**

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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