

ALPHA[®] SACX0307-FT and SACX0300-FT

Lead Free Solder Alloy for High Temperature Dipping Application

DESCRIPTION

ALPHA[®] SACX0307-FT is Low Silver lead-free alloy suitable for use as a replacement for SnPb, SAC305 and other low silver SAC alloys in high temperature lead tinning applications. Under high temperature process at 360 °C to 440°C, the solder surface remains reflective with very minimal of oxide layer formation. The superior wetting performance of this alloy along with reduced pot maintenance due to low dross rates help improve production yield. SACX0307-FT has been engineered to minimize copper dissolution and also to improve total cost of ownership.

The SACX0300-FT variant is used as a replenishment alloy in solder baths with elevated copper levels. As with all Alpha Metals bar solder, Alpha's proprietary Vaculoy[™] 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 based materials.
- COPPER EROSION – Low erosion in long, hot exposure soldering process.
- DROSS GENERATION – Lowest in class due to the addition of a special dross reducing agent and 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 solderability due to good wettability.
- Reduces erosion of copper plating which improving assembly reliability.

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

ALPHA SACX0307-FT is suitable for high temperature lead tinning processes. A solder pot temperature of 350 - 440°C (662 - 824 °F) is recommended, depending on dipping applications and component size. For suitable solder fluxes, please see our selector guide.

SM#1269 2015-06-29

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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	SACX0307-FT
Solidus	Celsius	217.6
Liquidus	Celsius	228.3
Hardness	HV	13.0
Density	g/cc	7.33
Specific Heat Capacity	J/kg °C	0.210
Thermal Expansion Coefficient	(30 - 100 °C) $\mu\text{m}/\text{m}^\circ\text{C}$	19.8
	(100 - 180 °C) $\mu\text{m}/\text{m}^\circ\text{C}$	23.3
Tensile Stress	MPa	35.3
Tensile Strain	%	6.2
Yield Stress	MPa	27.6
Elongation	%	36.3

SAFETY

Please refer to MSDS for advice on proper handling and safety instructions.

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.

AVAILABILITY

ALPHA SACX0307-FT Plus is available in 1kg (2.2lb) Bar, chunks, Feeder Ingots and Autofeed Wire.