CHIPQUIK® SMDAL50

Datasheet revision 1.1 www.chipquik.com

Aluminum Solder Paste Water-Soluble Sn96.5/Ag3.5 T3 (50g jar)

Product Highlights

Used for soldering Aluminum to Aluminum, Aluminum to Copper, Aluminum to Brass, Aluminum to plated terminals
Printing speeds up to 100mm/sec
Long stencil life
Wide process window
Compatible with enclosed print heads
RoHS 3 and REACH compliant

Specifications

Alloy:	Sn96.5/Ag3.5
Mesh Size:	T3
Micron (µm) Range:	25-45
Flux Type:	Synthetic Water-Soluble
Flux Classification:	ROM1 (Water Soluble, Must be cleaned off post-use using Hot Water (60°C+) or IPA)
Metal Load:	75% Metal by Weight
Melting Point:	221°C (430°F)
Packaging:	50g Jar
Shelf Life:	Refrigerated >12 months, Unrefrigerated >6 months *See notes below:

*Shelf Life Notes: Chip Quik® solder paste is good past its quoted shelf life, regardless of refrigeration. Before use, visually inspect the solder paste to ensure it is not dried out or clumpy, or check stencil release. If stored in a jar, stir the product thoroughly for 2-3 minutes before inspection and use.

Chip Quik® solder paste is manufactured using Made in USA high quality synthetic flux and precision atomized metal powder. Chip Quik® solder paste is guaranteed for 12 months from date of manufacture, regardless of refrigeration. If you have any issues with our solder paste, please contact Chip Quik® directly for no charge warranty replacement. Please retain original bill of sale, and solder paste in original container as we may request its return for internal R&D testing purposes.

Printer Operation

Print Speed: 25-100mm/sec
Squeegee Pressure: 70-250g/cm of blade
Under Stencil Wipe: Once every 10-25 prints, or as necessary

Stencil Life

>12 hours @ 20-50% RH 22-28°C (72-82°F)
>4 hours @ 50-70% RH 22-28°C (72-82°F)

Stencil Cleaning

Automated stencil cleaning systems for both stencil and misprinted boards. Manual cleaning using isopropyl alcohol (IPA).

Storage and Handling

Refrigerate at 3-8°C (37-46°F). Do not freeze. Allow 4 hours for solder paste to reach an operating temperature of 20-25°C (68-77°F) before use.

Transportation

This product has no shipping restrictions. Shipping below 0°C (32°F) or above 25°C (77°F) for normal transit times by ground or air will not impact this product's stated shelf life.

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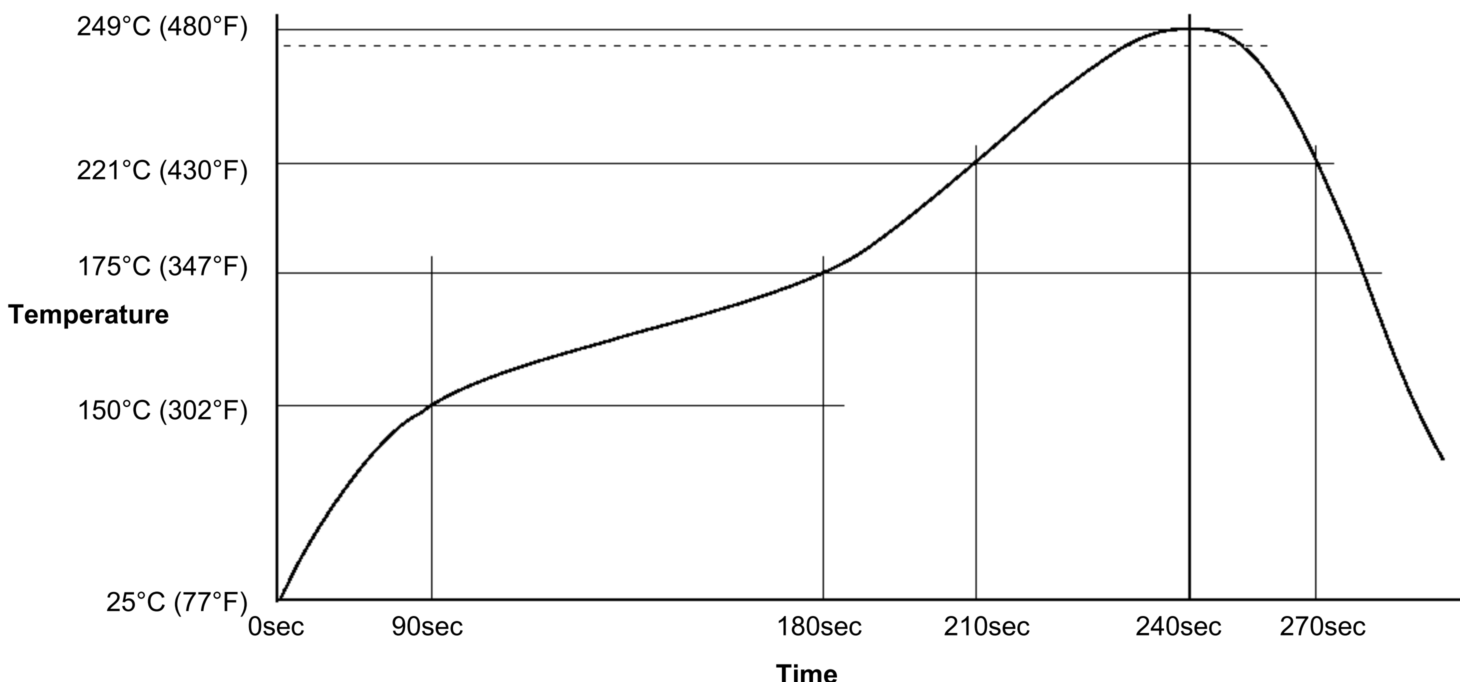
Recommended Profile

Reflow profile for Sn96.5/Ag3.5 solder assembly, designed as a starting point for process optimization.



Application Notes

SMDAL solder paste uses a special stronger flux to break down the aluminum oxide layer when it is heated (activated). You need to apply sufficient heat in a short enough amount of time to activate the flux in the solder paste, and then heat your aluminum to 260°C to 300°C, and do that within 4 to 5 minutes. The solder paste itself needs to reach at least 249°C (as per our recommended reflow profile) to fully melt, but you will usually need to heat your aluminum hotter than this. Also, make sure to measure the temperature of the aluminum, and not the surrounding air. Heating the aluminum to 260°C to 300°C, or even a little hotter will help the aluminum accept the solder and form a strong intermetallic bond with the Tin/Silver alloy in the SMDAL solder paste.

The biggest factor in success in soldering to aluminum with the SMDAL is getting enough heat into the aluminum in a short amount of time, before all the flux activity in the SMDAL is used up.

Test Results

Test J-STD-004 or other requirements as stated	Test Requirement	Result
Viscosity – Malcom @ 10 RPM/25°C ($x10^3$mPa·s)	IPC-TM-650: 2.4.34.4	300-500
Conflict Minerals Compliance	Electronic Industry Citizenship Coalition (EICC)	Compliant
REACH Compliance	Articles 33 and 67 of Regulation (EC) No 1907/2006	Contains no substance >0.1% w/w that is listed as a SVHC or restricted for use in solder materials

Conforms to the following Industry Standards:

J-STD-004B, Amendment 1 (Solder Fluxes):	Yes
J-STD-005A (Solder Pastes):	Yes
J-STD-006C, Amendments 1 & 2 (Solder Alloys and Fluxed/Non-Fluxed Solders):	Yes
RoHS 3 Directive (EU) 2015/863:	Yes

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