

Product Data Sheet

Sn992 Pb-Free Soldering Alloy

Features

- Produces shiny, smooth solder joints under most soldering conditions
- Low cost – does not contain Ag
- Lower dross formation than other SAC and Sn/Cu-based alloys
- Less copper erosion than SAC305
- Compatible with other Sn/Cu-based alloys – no need to dump your pot
- Optimized for use in solder paste form through the addition of Bi

Physical Properties and Process Set-up

	Melting Point	Density	Tensile Strength (MPa)	Peak Temperature	Time Above Liquidus
Sn992	227°C	7.3	28	237°-255°C	30-90 Sec
SAC305	217°-220°C	7.4	52	229°-255°C	30-90 Sec
Sn63/Pb37	183°C	8.4	44	205°-220°C	30-90 Sec

Other than a slight modification to the reflow profile, solder pastes manufactured with the Sn992 alloy can be run in the same set-up conditions as pastes manufactured with SAC305.

Technical Support

Indium Corporation's internationally experienced engineers provide in-depth technical assistance to our customers. Thoroughly knowledgeable in all facets of Material Science as it applies to the electronics and semiconductor sectors, Technical Support Engineers provide expert advice in solder properties, alloy compatibility and selection of solder preforms, wire, ribbon and paste. Indium Corporation's Technical Support engineers provide Rapid Response to all technical inquiries.

Material Safety Data Sheet

The MSDS for this product can be found online at <http://www.indium.com/techlibrary/msds.php>

Introduction

Sn992 Pb-Free solder is a low cost alternative to traditional SAC305. In addition to the lower cost, this cobalt- and bismuth-doped Sn/Cu alloy produces smoother, shinier joints and lower dross (in wave soldering) than SAC305 and other Sn/Cu based alloys.

Why Cobalt and Bismuth?

The addition of cobalt (Co) works to improve the solder joint appearance due to its grain refining properties. The addition of nickel (Ni) is also popular for the same reasons. However, Ni has a lower operating limit of 0.035%. Below that percentage, the benefits of Ni are lost. Co has a much lower operating limit of 0.003%.

Small amounts of bismuth (Bi) have been shown to help the mechanical reliability of Pb-Free alloys. At percentages well below 1% of Bi, there is no concern for fillet lifting or reaction with Pb, which are common concerns with Bi-containing alloys.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the

products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices.

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