

Product Data Sheet

# Sn995 Cobalt-Doped Pb-Free Soldering Alloy

## Features

- Shiny, smooth solder joints similar to Sn/Pb solder
- 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
- Available as a solder bar for wave soldering and cored wire for rework applications

## Physical Properties and Process Set-up

	Melting Point	Density	Tensile Strength (MPa)	Topside Preheat	Pot Temperature
Sn995	228°C	7.3	28	110°-115°C	260°-275°C
SAC305	217°-220°C	7.4	52	110°-115°C	260°-270°C
Sn63/Pb37	183°C	8.4	44	85°-105°C	250°-260°C

## Low Dross

Because of Indium Corporation's unique manufacturing process, **Sn995** bar solder exhibits much lower dross than other Sn/Cu-based alloys.

260°C	RUN TIME (hrs)	DROSS (g)	DROSS RATE
Sn995	22.28	523.3	23.49g dross/hour
SAC305	19.92	1303.5	65.44g dross/hour
SN100C	25.00	1357.6	54.3g dross/hour

## Introduction

**Sn995 Cobalt-Doped Pb-Free Soldering Alloy** is a cobalt-doped Sn/Cu alloy that provides a low cost alternative to traditional SAC305. In addition to its low cost, it produces smoother, shinier joints and lower dross than SAC305 and other Sn/Cu-based alloys.

## Why Cobalt?

There are a number of Sn/Cu-doped alloys available in the industry today but, unlike cobalt (Co), they all have shortcomings.

The addition of nickel (Ni) is popular, but Ni has a lower operating limit of 0.035%. Below that percentage, the benefits of Ni are lost. Co has a lower operating limit of 0.003% and a much lower risk of dopant depletion.

Bismuth (Bi) is also commonly used as a dopant; however, numerous studies show that Bi content is related to fillet lifting. This is not a risk when using Co.

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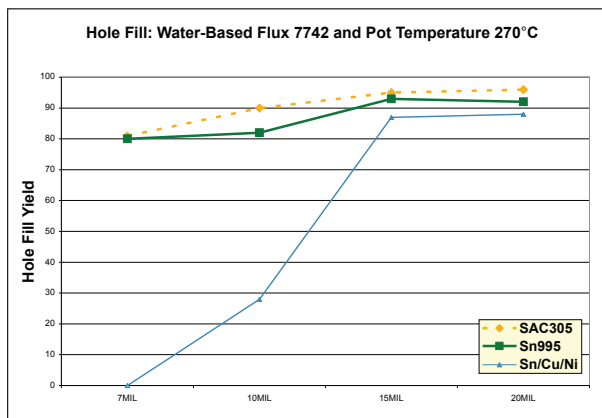
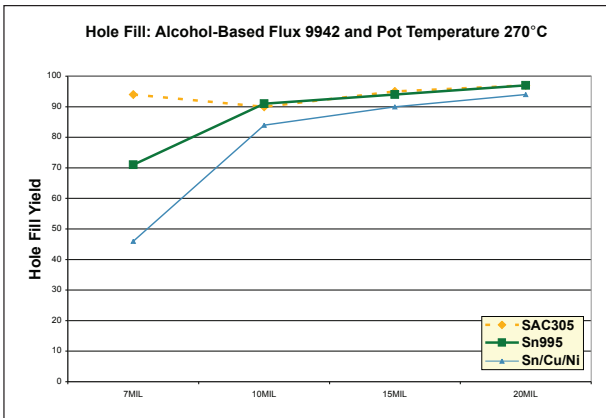
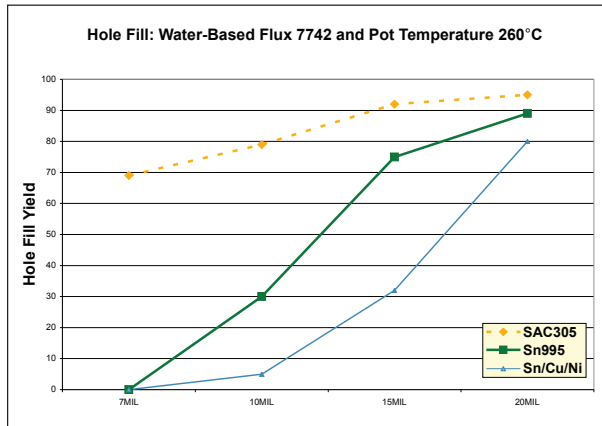
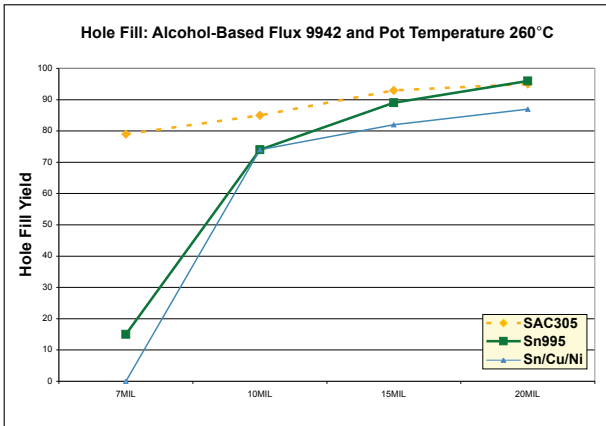
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### Hole Fill Performance

**Sn995** alloy provides improved hole fill performance when compared to other Sn/Cu-based alloys. Using optimized process conditions and flux materials the hole fill performance can equal that of SAC305.



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