

Electronic **BALVER ZINN**[®]

Technical Data Sheet

BALVER ZINN SOLDER

i-SAC - Series

SnAgCuCoGe

General Information

BALVER ZINN, the specialist for micro – alloyed solder presents the new tin silver based **i-SAC** solder family. The solidification characteristic of silver containing alloys has been upgraded by addition of Cobalt (Co). **BALVER ZINN SOLDER i-SAC105** (silver contents on request between 0.5 – 1.5%) is a combination of the advantages of silver free alloys and the characteristics of silver containing alloys as for example SnAg3.0Cu0.5. Low priced, bright and shiny solder joints, fine grained microstructure despite the silver content. Cobalt in **i-SAC105** is responsible for a homogenous microstructure in comparison to standard SnAg alloys! In the **BALVER ZINN SOLDER i-SAC105** formulation Ge plays the role of antioxidant, preferentially reacting with oxygen to protect the solder from the oxidation that results in the formation of dross. **BALVER ZINN SOLDERS i-SAC105; i-SAC205; i-SAC305; i-SAC387** are part of the new micro – alloyed lead free solder based on SnAg.

BALVER ZINN SOLDER i-SAC - Series does not contain hazardous substances beyond the limits prescribed by EU Directive 2002/95/EG ("RoHS")

Further information are available in the **BALVER ZINN information "Lead free wave soldering."** Technical information and Data Sheets can be found on our website (www.BALVERZINN.com). You can also obtain all information and documents directly from **BALVER ZINN**.

BALVER ZINN Product Range

The **BALVER ZINN** product range includes, in addition to solder bars, solder pastes, solder wires and soldering fluxes. As well as **SN100C BALVER ZINN** offers a full range of patented and unpatented solders for wave soldering, reflow soldering and rework. More news from **BALVER ZINN: SN100CS; SN100CLS!**

General Process Information

- When the copper content of a working wave solder pot exceeds 0.85% there is likely to be an increase in soldering defects, particularly bridging. To help you keep the copper content in the right range **BALVER ZINN** offer a prompt and complimentary solder bath analysis service.
- Because of the silver content **i-SAC - Series** is aggressive to the stainless steel used to make the pots and pumps of wave soldering machines. It should be used only in machines with a plated pots.
- Although with the right Ge level **i-SAC - Series** is resistant to oxidation, where circumstances result in a high tendency to dross production the use of a nitrogen blanket on the solder bath can be useful

BALVER ZINN conducts complimentary, regular solder bath analyses to determine the customer-specific bath top-up schedule and avoid problems caused by a too high level of impurities.

Process Conditions for Wave Soldering

- Solder bath temperature 260-270°C. Please note that it is not the solder temperature but the temperature measured on the components that determine that thermal stress to which the component is subjected!
- Before entering the wave, the printed circuit boards should be about 110-135°C, measured on the top surface, are usual conditions. Here, the old rule applies: "Do not try to use the wave for preheating"!
- Contact time 3 – 5 seconds.

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Delivery sizes

Format		L mm	W mm	H mm
Ingots*	1 kg	325	28	15
	4 kg	300	50	40
Ingots with hole	3,7 kg	540	50	20
	6 kg	570	48	35
Bar		400x10x10		
Pellet		12 x 25		
Wire, solid, on reel		Ø 1.0 – 6.0		

*Other dimensions available on request.

Composition of the Alloys according to WBZ TripleX: 2009

Element	<i>i</i> -SAC105 SnAg1.0Cu0.5CoGe in weight.-%	<i>i</i> -SAC205 SnAg2.0Cu0.5CoGe in weight.-%	<i>i</i> -SAC305 SnAg3.0Cu0.5CoGe in weight.-%	<i>i</i> -SAC387 SnAg3.8Cu0.7CoGe in weight.-%
Sn	Remainder	Remainder	Remainder	Remainder
Ag	1.0 ± 0.1	2.0 ± 0.1	3.0 ± 0.1	3.8 ± 0.1
Cu	0.5 ± 0.1	0.5 ± 0.1	0.5 ± 0.1	0.7 ± 0.1
Co	0.045 ± 0.005	0.045 ± 0.005	0.045 ± 0.005	0.045 ± 0.005
Ge	0.0045 ± 0.0005	0.0045 ± 0.0005	0.0045 ± 0.0005	0.0045 ± 0.0005
Ni	max. 0.01	max. 0.01	max. 0.01	max. 0.01
Al	max. 0.001	max. 0.001	max. 0.001	max. 0.001
As	max. 0.03	max. 0.03	max. 0.03	max. 0.03
Au	max. 0.05	max. 0.03	max. 0.03	max. 0.03
Bi	max. 0.03	max. 0.03	max. 0.03	max. 0.03
Cd	max. 0.002	max. 0.002	max. 0.002	max. 0.002
Fe	max. 0.02	max. 0.02	max. 0.02	max. 0.02
In	max. 0.03	max. 0.03	max. 0.03	max. 0.03
Pb	max. 0.05	max. 0.05	max. 0.05	max. 0.05
Sb	max. 0.05	max. 0.05	max. 0.05	max. 0.05
Zn	max. 0.001	max. 0.001	max. 0.001	max. 0.001

*Max. solder bath impurities are not standardized, but are based on practical experience.

Storage Conditions / Durability

Dry storage at room temperatures

Safety Advice

Before use please refer to the appropriate Material Safety Data Sheet.

The information in this Data Sheet is based on data considered accurate. The measured values stated are based on own measurements, but do not represent assured properties or delivery specifications. Because of the vast number of different materials and applications – also with respect to possible protective rights of third parties – Balver Zinn Josef Jost GmbH & Co. KG **cannot** accept any liability.



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