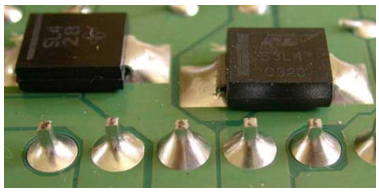
Technical Data Sheet

BALVER ZINN SOLDER SN100C SnCu0.7Ni SN100Ce SnNi



Product Description

BALVER ZINN SOLDER SN100C and SN100Ce are lead-free* alloys especially developed for wave soldering. **SN100C** is the trade name for the lead-free* alloy **SnCu0.7Ni** for wave soldering. This alloy was marked out by the NASA consortia to be the most reliable lead-free* alloy in wave soldering. See also: **BALVER ZINN TECHNICAL INFORMATION: "SN100C a high reliable lead free alloy". BALVER ZINN SOLDER SN100C** is a nickel micro-alloyed eutectic tin copper alloy with small traces of germanium to reduce oxidation. **BALVER ZINN** has more than five years experience in producing fine grain solders with unchanging quality. **BALVER ZINN SOLDER SN100C** excels all other lead-free* alloys in lowest copper dissolution and allows profitable mass production. A further outstanding property is the bright and shiny appearance of the solder joints after wave and selective soldering. **BALVER ZINN SOLDER SN100C** is well-established in wave soldering and selective soldering. According to the European ELFNET study, **SN100C** is the most used alloy for wave soldering in Europe. The accurate amount of nickel covered worldwide by patents causes less stainless steel dissolution than other lead-free* alloys. In selective soldering with higher process temperatures a lower amount of copper dissolution is an essential technical advantage. **BALVER ZINN SOLDER SN100Ce is a copper free alloy with Nickel and Germanium for refilling.**

*__BALVER ZINN SOLDER SN100C and SN100Ce__ contain, to our knowledge, no substances in concentrations, which are prohibited by the European legislation 2002/95/EG ("RoHS").

Further information is available in the **BALVER ZINN TECHNICAL INFORMATION**: "**Lead-free wave soldering".**

BALVER ZINN Product program

BALVER ZINN offers in addition solder pastes, fluxes and solder wires. Beside the **SN100C** product family **BALVER ZINN** offers further patent-free and patented lead free alloys for wave soldering, reflow and rework.

Field of application and conditions of processing

- A copper contamination above 0.85 % causes significantly increased amounts of solder defects, mostly bridges. To avoid this, **BALVER ZINN** offers a cost-free solder bath analysis and helps with advices to maintain the copper content. In most cases **BALVER ZINN SOLDER SN100Ce** is the best alloy for refilling to keep the copper content constant. More information about this subject is available in the **BALVER ZINN TECHNICAL INFORMATION**: **"Constant soldering properties by proper solder bath management".**
- Above 0.9 % copper content there is a risk of intermetallic particles dissipation. Due to the low density of lead-free alloys the intermetallic compounds are no longer on the surface, now they settle down to the bottom of the solder bath.
- **SN100C** does not contain silver and attacks stainless steel less than tin-silver solders. In some cases it is possible to use the nickel micro-alloyed **SN100C** in existing soldering machines without special coatings.
- To reduce dross in the solder wave the use of so-called nitrogen hoods is indicated.
- The recommended process temperature in wave soldering is between 260 and 270°C. Attention: the risk of overheating electronic components is not only related to the soldering temperature, but mainly to the temperature the component bodies will reach.
- The preheating temperature of the electronic assemblies to solder should be 10-20 °C higher than in the tin-lead time. 110-135°C, measured on the top side, are usual conditions. The old rule: "Do not misuse the solder wave for preheating" is true also in the lead-free time.
- Due to the physical properties of lead-free solders the wetting time or/and the contact length with the solder have to be increased to overcome the draw-backs of lead-free solders.

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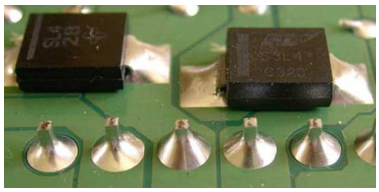
SN100Ce SnNi



Physical and mechanical data of SN100C In comparison to tin lead

	SN100C SnCu0.7Ni	Sn63Pb37
Melting point ℃	227	183
Density g/cm³	7,4	8,4
Specific heat J/g	61,0	45,0
Electrical resistance µΩm	13,0	14,5
Surface tension mN/m*	542,45	449,02

*by FHG / IZM Berlin

Deliver sizes

Format		L mm	B mm	H mm
Ingots*	1 kg	325	28	15
	4 kg	300	50	40
Ingots with eye	3,7 kg	540	50	20
	6 kg	570	48	35
Bar			400x10x8 400x10x10	
Pellets			12 x 25	
Wire, massive, on reels			Ø 1,0 – 6,0	

*other delivery forms on request.

Composition of alloys

Element	SN100C SnCu0.7Ni in Gew.-%	SN100Ce SnNi in Gew.-%	critical concentration of impurities*
Sn	Rest	Rest	Rest
Cu	0,6 ± 0,1	0,2 ± 0,2	< 0,4 > 0,85
Ge	0,0055 ± 0,0005	0,0055 ± 0,0005	> 0,1
Ni	0,05 ± 0,005	0,05 ± 0,005	< 0,01 > 0,10
Ag	max. 0,05	max. 0,05	> 0,1
Al	max. 0,001	max. 0,001	> 0,002
As	max. 0,03	max. 0,03	> 0,03
Au	max. 0,05	max. 0,05	k. A.
Bi	max. 0,03	max. 0,03	> 0,10
Cd	max. 0,002	max. 0,002	> 0,002
Fe	max. 0,02	max. 0,02	> 0,03
In	max. 0,05	max. 0,05	k. A.
Pb	max. 0,05	max. 0,05	> 0,1 (RoHS)
Sb	max. 0,05	max. 0,05	> 0,05
Zn	max. 0,001	max. 0,001	> 0,005

*critical impurities are not subject of international standards; they are only related to practical experience!

Storage conditions and shelf life Dry, at room temperature for minimum 2 years

Health & Safety Read the material safety data sheet and warning label before use.

OUR GLOBAL PARTNERS FOR LEAD-FREE SOLDERS

Nihon Superior Co., Ltd	DKL Metals Ltd., Avontoun Works	Florida CirTech, Inc.
Phone:+81(0) 6-63 80 11 21	Phone:+44 (0)1506-847710	Phone:+1 (970) 346-8002
Fax: +81(0) 6-63 80 12 62	Fax: +44 (0)1506-848199	Fax: +1 (970) 346-8331
E-mail:info@nihonsuperior.co.jp	E-mail:sales@dklmetals.co.uk	E-mail:b.gilbert@fctassembly.com
Web page:www.nihonsuperior.co.jp	Web page:www.dklmetals.co.uk	Web page: www.fctassembly.com

BALVER ZINN
Josef Jost GmbH & Co. KG
Blintroper Weg 11
D-58802 Balve

☎ +49 (0) 2375 / 915-0
Fax:+49 (0) 2375 / 915-114
✉ TECHNIK@BALVERZINN.com
www.BALVERZINN.com

HRA 4705
Balver Zinn, Josef Jost GmbH & Co. KG