

- Microalloyed lead free solders
- Good wetting properties
- Smooth and shiny surface
- Reduced copper leaching
- Significantly diminished dross formation

Description

Due to the unique production process, the very high purity and the micro-alloying elements Ge and P, TAMURA ELSOLD SN100Ag MA-S alloys offer a significantly reduced dross formation, a better soldering quality and economic advantages. In combination with tin, Ge and P form a protection layer on the surface of the soldering bath, but, of course, both are slightly consumed by time. For compensation of this, in many applications REFILL alloys with increased Ge and P are used very successfully. In some applications at very high temperatures, very strong and turbulent bath movement or also long power-on times combined with low consumption of solder, the consumption can be further increased and exceed the amount of P and Ge added by REFILL alloy. For such difficult conditions new REFILL Plus alloys offer a reliable solution. They have an even higher amount of Ge and an even higher purity that means a lower level of elements like Fe. This reduces the dross formation and also the consumption of P. Consequently, for all applications, the right solution is available.

For selective soldering systems with a good inert gas atmosphere, non-micro-alloyed solders are recommended - also according to the recommendation of the system manufacturers - with regard to nozzle coatings, i.e. our standard alloys such as SnCu0.7 or SAC305 of highest quality.

Application

REFILL and REFILL Plus alloys will be used to replenish solder bath. Consumed solder will be replaced by corresponding REFILL or REFILL Plus alloy, when solder pot analysis indicates a drop of active micro-alloyed components.

Conform to International Standards

The specification is in accordance with EN 61190-1-3, ISO 9453 and IPC J-STD 006C or is narrower, with nickel as an alloying element and not as an impurity.

Storage/Shelf life

The material can be stored for a minimum of 60 months from the date of manufacturing. Care should be taken, however, to store the material in a clean, dry environment. Using the material beyond the official shelf life is possible without any problem in most cases. However, this should be confirmed by adequate trials before actual usage.

Health and Safety

TAMURA ELSOLD SN100(Ag) MA-S solder REFILL solder alloys are not considered to be harmful. Information relating to health and safety should be taken from the respective material safety data sheet.

Technical Product Information

TAMURA ELSOLD SN100Ag MA-S REFILL and REFILL Plus Alloys

Forms of Supply

TAMURA ELSOLD SN100Ag MA-S REFILL and REFILL Plus alloys are available in the form of ingots/bars and solid wires for wave, dip and selective soldering equipment.

Description	Dimensions [mm]	Weight /Piece
Ingots with suspension eyelets	50 (W) x 18 (H) x 600 (L)	About 4 kg
1-kg bar	50 (W) x 20 (H) x 490 (L)	About 3 kg
Triangular bars	20 (W) x 20 (H) x 335 (L)	1 kg
Clippings	8 (W) x 10 (H) x 400 (L)	About 200 g
Solid wires	8 (W) x 10 (H) x 30 (L)	Bulk
	Different Diameters 2 – 6	On spools of 500 g, 1 kg, 4 kg, 15 kg

TAMURA ELSOLD SN100Ag MA-S REFILL Alloys

Properties	SN100Ag0.3 MA-S REFILL	SN100Ag1 MA-S REFILL	SN100Ag3 MA-S REFILL
Composition [%]	Sn 99.5	Sn 98.8	Sn 96.8
	Ag 0.3 ± 0.2	Ag 1.0 ± 0.2	Ag 3.0 ± 0.2
	Cu 0.2 ± 0.1	Cu 0.2 ± 0.1	Cu 0.2 ± 0.1
	Ni 0.02-0.03	Ni 0.02-0.03	Ni 0.02-0.03
	Ge 0.006-0.010	Ge 0.006-0.010	Ge 0.006-0.010
	P 0.012-0.020	P 0.012-0.020	P 0.012-0.020

Non-copper-reduced variants available on request:

SN100Ag3 MA-S REFILL SAC305: SnAg3Cu0.5 + Ni + Ge + P

Copper-free versions available on request:

Sn99.7Ag0.3 MA-S REFILL SA03: SnAg0.3 + Ni + Ge + P

TAMURA ELSOLD SN100Ag MA-S REFILL Plus

Alloy variants for refilling at low production quantities and/or higher thermal/oxidative load

Properties	SN100Ag0.3 MA-S REFILL Plus	SN100Ag3 MA-S REFILL Plus
Composition [%]	Sn 99.5	Sn 96.8
	Ag 0.3 ± 0.2	Ag 3.0 ± 0.2
	Cu 0.2 ± 0.1	Cu 0.2 ± 0.1
	Ni 0.02-0.03	Ni 0.02-0.03
	Ge 0.025-0.035	Ge 0.025-0.035
	P 0.012-0.020	P 0.012-0.020

The information contained herein is based on technical data that we believe to be reliable and is intended for use by persons having technical skill, at their own risk. Users of our products should make their own tests to determine the suitability of each product for their particular process. TAMURA ELSOLD will assume no liability for results obtained or damages incurred through the application of the data presented.