Technical Product Information

TAMURA ELSOLD SN100 MA-S REFILL and REFILL Plus / SnP1 + SnGe1

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

Lowest Dross Formation Even Under Difficult Conditions –
Perfect Solutions for all Applications

Due to its unique production process, its very high purity and the micro-alloying elements Ge and P, SN100 MA-S offers 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:

	SN100 MA-S	SN100 MA-S REFILL	SN100 MA-S REFILL Plus
Application	For initial filling of machine	For refilling at low/normal thermal/oxidative stress and/or high production volumes	For refilling at high thermal/oxidative stress and/or low production volumes
Sn	99.3 %	99.8 %	99.8 %
Cu	0.7 %	0.2 %	0.2 %
P	10 – 50 ppm	120 – 200 ppm	120 – 200 ppm
Ge	30 – 70 ppm	60 – 100 ppm	250 – 350 ppm

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.

For temporarily increased consumption or as an alternative or addition for regeneration of solder bath Ge and P can also be added by using concentrated alloys with 1000 ppm P/Ge:

- SnP1 as desoxidation tablets in bottles with 50 or 800 pieces
- SnGe1 as 250 g bars

As a result of solder bath analysis suitable use (incl. right amounts) of REFILL, REFILL Plus or SnP1/SnGe1 will be recommended.

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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

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.

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	50 (W) x 18 (H) x 600 (L)	About 4 kg
eyelets	50 (W) x 20 (H) x 490 (L)	About 3 kg
1-kg bar	20 (W) x 20 (H) x 335 (L)	1 kg
Triangular bars	8 (W) x 10 (H) x 400 (L)	About 200 g
Clippings	8 (W) x 10 (H) x 30 (L)	Bulk
Solid wires	Different Diameters 2 – 6	On spools of 500 g, 1 kg, 4 kg, 15 kg