Ultrapure® SAC305

Sn96.5Ag3.0Cu0.5

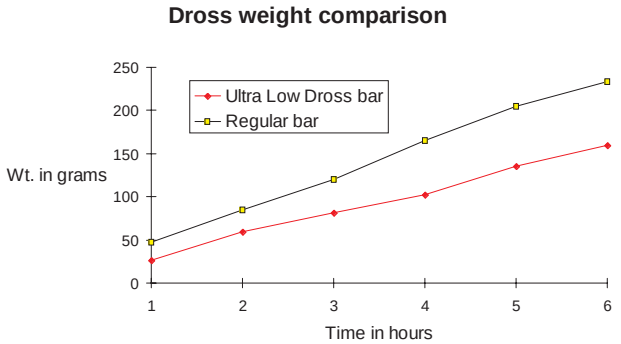
Extruded Low Dross Bar Solder

Product Description

Lead-free wave soldering processes tend to produce a greater amount of dross than traditional leaded processes. For this reason, Kester produces all lead-free bar solder products with anti-drossing technology to improve process control and to allow the user to get the most value for the money with minimal maintenance costs. Kester Ultrapure® SAC305 Bar Solder was designed to minimize the amount of dross generated in a wave soldering, selective soldering or dip soldering process. Kester Ultrapure® SAC305 is manufactured with virgin metals which meet the high standards of Kester Ultrapure® line of bar solders.

When molten solder comes in contact with air, it forms metal oxides or dross. This dross mixes in with the solder in the upper layer of solder in the solder pot to form a pasty solder dross mixture. Many solder impurities have been known to contribute to dross formation - aluminum, cadmium, iron and zinc are the most common of these. The purity level of Kester Ultrapure® SAC305 exceeds the industry requirements for allowable impurity levels, which helps control dross levels. Aside from exceptional control on solder purity, the Kester Ultrapure® SAC305 manufacturing process integrates a low dross additive to minimize dross formation during the soldering process. Additionally, Kester employs an extrusion manufacturing technique to minimize oxidation and alloy segregation during the manufacturing process. Old-fashioned methods of casting individual bars lacks protection from the atmosphere in the molten state and exposes more surface area which produces correspondingly more oxide.

Kester Ultrapure® SAC305 yields less dross, bright solder joints, and a reduction in defects in wave, selective and dip soldering processes.



Pot Maintenance

Kester's Solder Analysis Program (Option C) should be utilized periodically to verify composition and purity. If the Copper level in the pot exceeds 0.85%, the alloy may behave more sluggishly and create hole-fill defects. Should you need to reduce the Copper level in the pot, Kester SAC300 (Sn97Ag3) should be added to balance the pot. A pot calculator for SAC305 can be found at www.kester.com in the Lead-Free Solutions section.

Maximum Allowed Impurities

Kester Ultrapure® SAC305 substantially exceeds the requirements of current industry standards for allowable impurity requirements.

Element	J-STD-006	Kester E-Bar	Kester Ultrapure®	Ultra Low Dross	Ultrapure® HAL
Gold	0.050	0.002	0.002	0.002	0.001
Antimony	0.050	0.050	0.050	0.050	0.010
Cadmium	0.002	0.001	0.001	0.001	0.001
Zinc	0.003	0.001	0.001	0.001	0.001
Aluminum	0.005	0.002	0.002	0.002	0.001
Iron	0.020	0.010	0.010	0.010	0.003
Arsenic	0.030	0.020	0.020	0.020	0.001
Bismuth	0.100	0.025	0.020	0.020	0.003
Nickel	0.010	0.002	0.002	0.002	0.001
Indium	0.100	0.007	0.007	0.007	0.002
Lead	0.100	0.100	0.050	0.050	0.050

Kester SAC305 bar solder purchased directly or through stocking distributors will conform to these requirements. Only the highest purity virgin metals are used to make Kester Ultrapure® SAC305. Kester Ultrapure® SAC305 meets or exceeds Industry Specification ASTM B32.

Some military contracts reference process specifications, such as WS-6536E, which require 0.2 - 0.5% antimony in the solder. MIL-STD-2000A, on the other hand, does not specify a minimum percentage of antimony. There is no requirement that antimony must be included in solder. Kester does not recommend the inclusion of antimony unless specifically required by specifications. Kester SAC305 conforms to the requirements of J-STD-006 (formerly QQ-S-571F).

Storage & Shelf Life

Kester Ultrapure® SAC305 solder has no limited shelf life when handled properly. Storage must be in a dry, non-corrosive environment. The solder surface may lose its shine and appear a dull shade of gray. This is a surface phenomenon and is not detrimental to product functionality.

Health & Safety

This product, during handling or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

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