New! ECOLLOY™ ALLOY

Qualitek International, Inc. has developed a new patented alloy, Ecolloy™ that has higher tensile strength and temperature cycling than SnCu alloys. Melting range of this new alloy is lower than SnCu alloys so it has better wettability during the reflow process. Presence of a much thinner IMC (Cu_3Sn) layer of Ecolloy™ facilitates higher drop performance in comparison.

ECOLLOY™ is available in Solder Paste, Bar & Wire Forms

New! ECOLLOY™

Advantages In Wave Soldering

- Low Dross
- Low Copper Dissolution Rate
- Excellent Wettability
- Higher Temperature Cycling than SnCu alloys and low silver SAC alloys
- Low Voids

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New! ECOLLOY™

Solder Bar Alloy Comparison

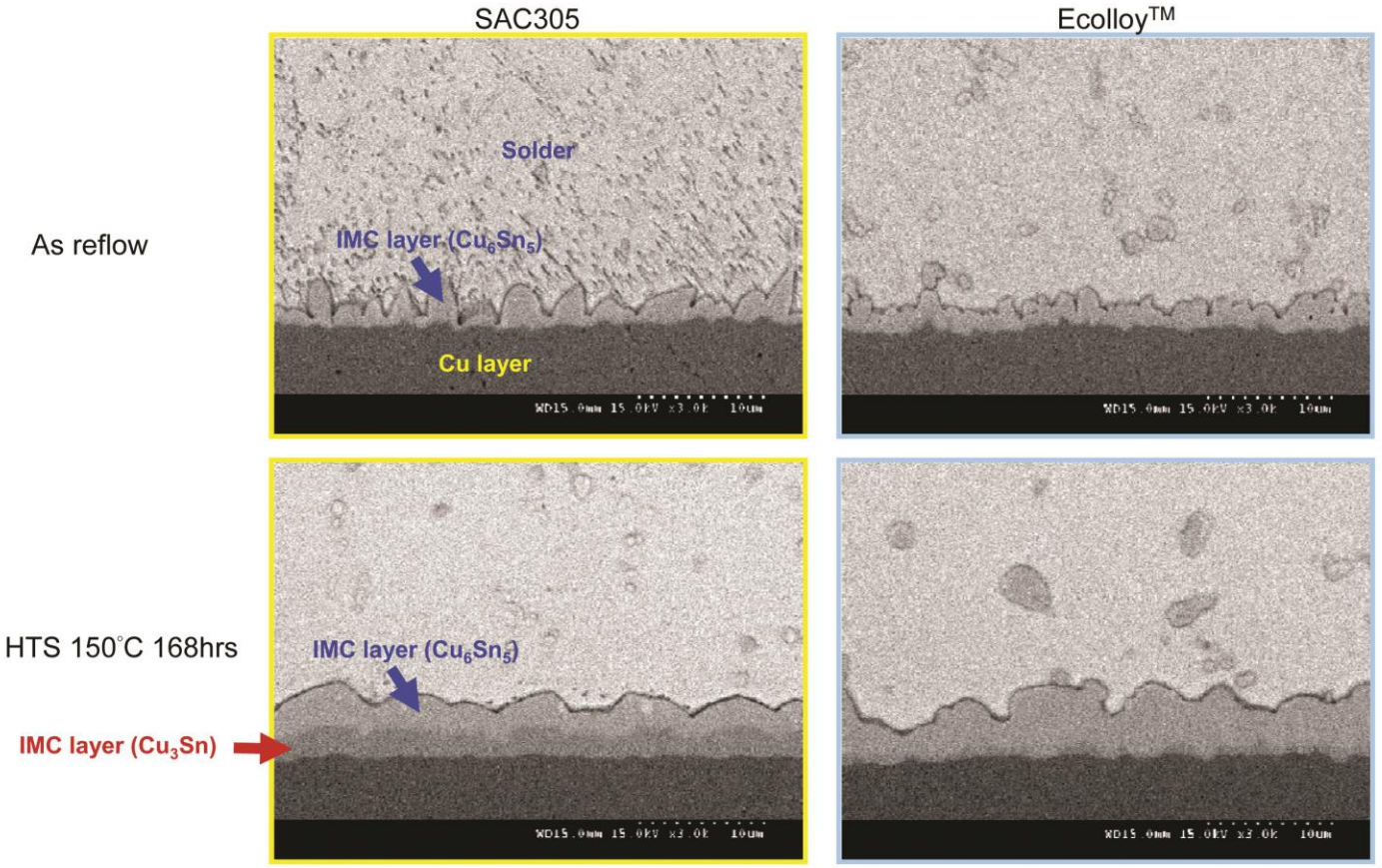
20 Lb. Box

ALLOY PROPERTIES COMPARISON CHART

		Unit	Ecolloy™	SAC305	SACX0307	Sn99.3/Cu0.7	Sn100C
Melting Point	Solidus	°C	221	217	218	226	227
	Liquidus	°C	227	221	228	229	230
Density		g/cm^3	7.4	7.4	7.3	7.3	7.3
Hardness		HV	23	14.1	13.9	12.5	11.3
Tensile Strength @ RT		MPa	63	49	36	34	35
Elongation @ RT		%	50	63	64	64	63
Coefficient of Thermal Expansion		ppm/°C	23	23	22	23	23
Specific Heat		J/g-K	0.23	0.23	0.23	0.23	0.23
Electrical Resistivity		μΩ-cm	12	12	12	13	12
Electrical Conductivity		MS/m	8.3	8.3	8.3	7.7	8.3
		%IACS	14.3	14.3	14.3	13.2	14.3

New! ECOLLOY™

Microstructure of SAC 305 vs Ecolloy



Intermetallic compounds (IMC) layer (Cu_3Sn) in Ecolloy™ is thinner than IMC layer in SAC305 that potentially leads to a higher drop performance. Ecolloy also has a higher tensile strength than SAC alloys.

New! ECOLLOY™

Differential Scanning Calorimetry or DSC

Differential scanning calorimetry or **DSC** is a thermo analytical technique in which the difference in the amount of heat required to increase the temperature of a sample and reference is measured as a function of temperature.

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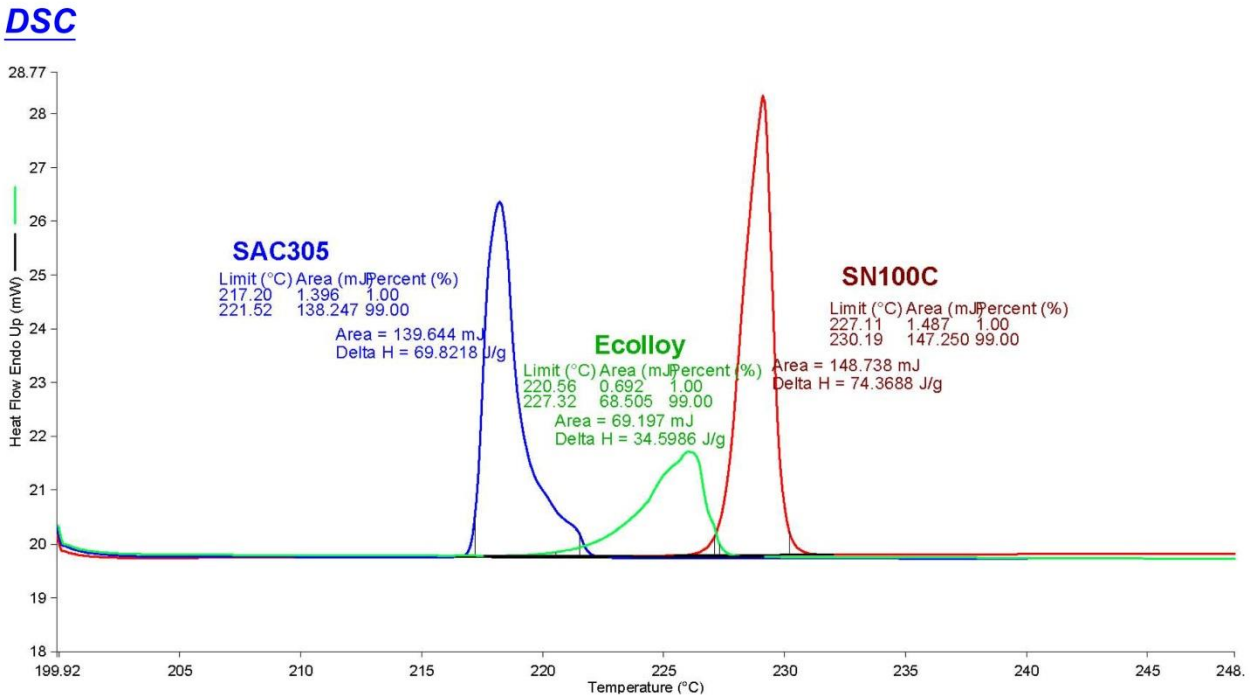
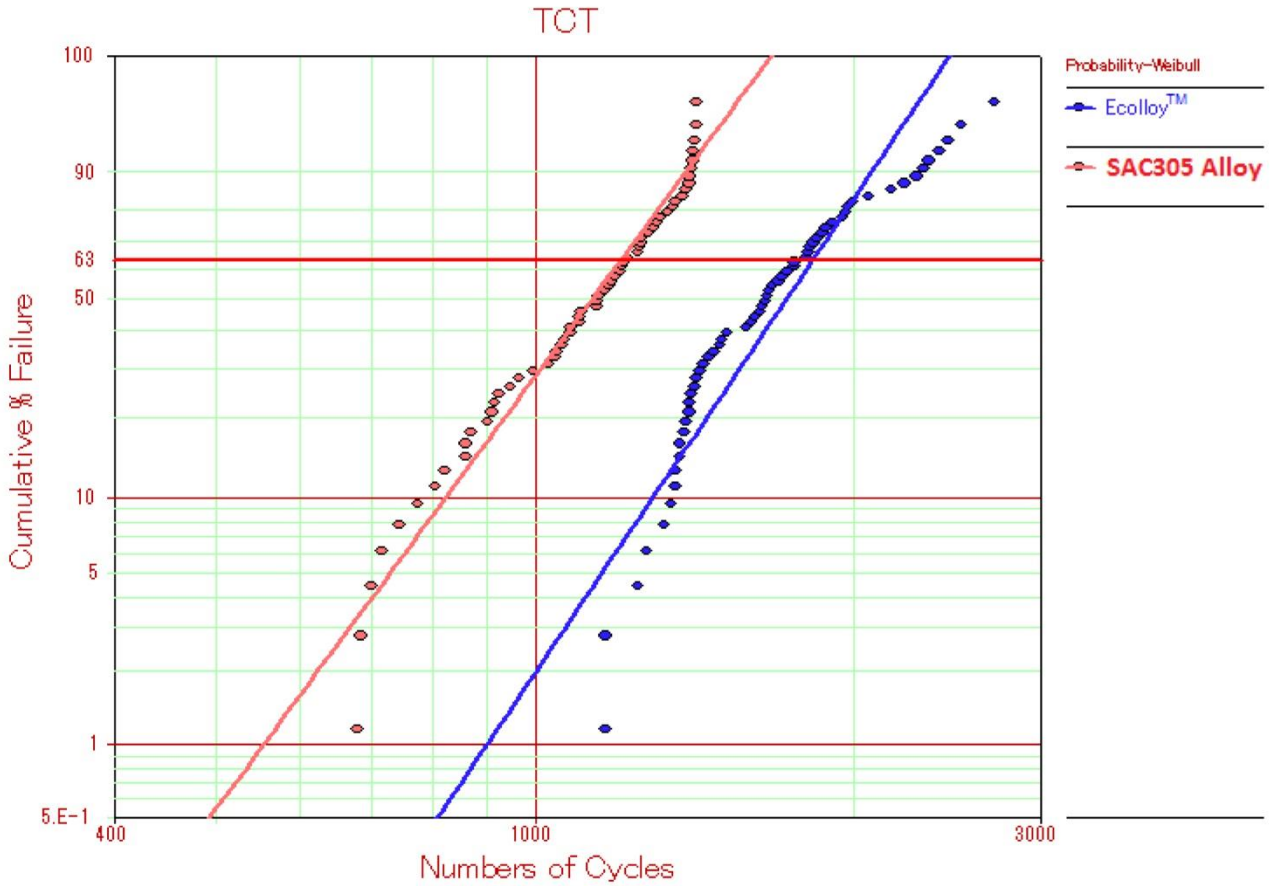


DSC results show that Ecolloy™ has a lower melting point than SnCu alloys. This indicates that Ecolloy has better performance than SnCu during reflow. Spreadability of Ecolloy is better than SAC105, so Ecolloy has better wettability during reflow process than low silver SAC alloy.

New! ECOLLOY™

Temperature Cycling Testing



SAC305 has shown to have the best TCT performance vs. SACX0307, SAC105 and SnCu alloys. However, TCT performance of Ecolloy™ has significant improvement than low silver containing SAC alloys.

New! ECOLLOY™

SAC 305 vs Ecolloy Solder Paste

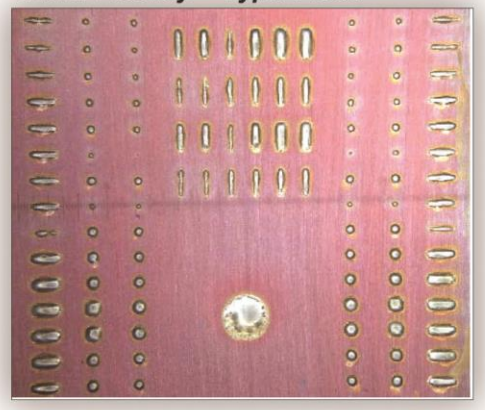
Appearance & Reflow

Solder Paste Appearance
Ecolloy™

Solder Paste Appearance
DSP825HF SAC 305

Standard Metal Loading
88% No-Clean
89% for Water-Soluble

REFLOW
825HF Ecolloy™ Type 4 89%



REFLOW
825HF SAC305 Type 4 89%

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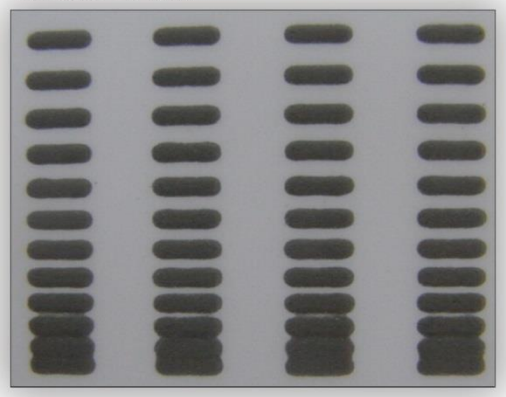
New! ECOLLOY™

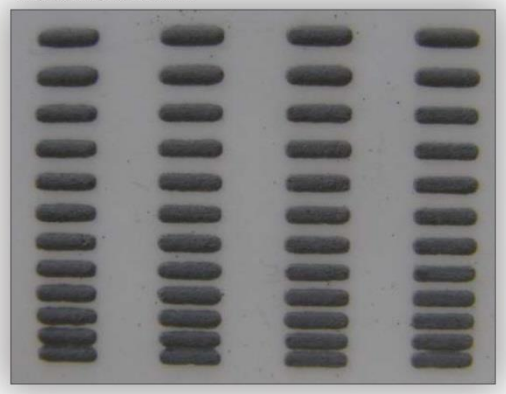
SAC 305 vs Ecolloy Solder Paste

Hot Slump – Solder Ball

Hot Slump Ecolloy™
Results 0.2mm

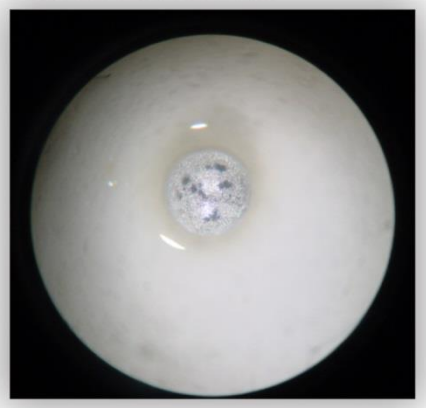


Hot Slump SAC 305
Results 0.1mm



Solder Ball Ecolloy™

Solder Ball SAC 305



New! ECOLLOY™ Available In Following Forms:

Solder Paste:

- No-Clean
- Water-Soluble

Paste Particle Size:

- Type 3
  Mesh -325+500
  Micron 45-25
- Type 4
  Mesh -400+635
  Micron 38-20

Bar Solder:

- 2 lbs. each bar
- 20lb. box

Wire Solder:

- 1lb. Spool
- 5lb. Spool
- 25lb. box