



SN100e™

PRODUCT BULLETIN

Paste - Wire - Flux Chemistries

Purity Improves Process

Qualitek's lead free solder SN100^e has been developed as a lead free alternative for those now using costly SAC alloys and for those switching from lead containing Sn63/Pb37 alloys to the lead free process.

SN100^e is manufactured from tin, copper, and cobalt to create solder so pure it far exceeds the most common specification requirements. SN100^e lead-free solder alloy is RoHS compliant and reduces copper dissolution. This alloy provides brighter, shinier, less grainy solder joints when compared to SAC305 alloy and is much less expensive.

Qualitek's manufacturing process assures batch-to-batch consistency for predictable solder performance.

Mixing Lead Free Alloys

SN100^e is compatible with all SAC and Sn/Cu alloys. SN100^e performs with ENIG, immersion tin, immersion silver, OSP, and hot air leveled board finishes. SN100^e provides ability to standardize on one lead-free alloy for all soldering processes (wave, SMT, selective, and re-work).

Versatile Uses

SN100^e is primarily used in printed circuit board assembly operations common to the electronics market. It is an available choice lead free alloy for the following Qualitek products:

- Solder Paste
- Wire Solder
- Bar Solder
- Solder Spheres
- Solder Powder

Certified

Certificates of Conformance and Analysis are automatically provided with each shipment.

Qualitek's SN100^e solders meet or exceed the rigid requirements of Specification J-STD-006.

Physical Property And Alloy Comparison

Alloy	Composition	Melting Point °C	Density	Tensile Strength, MPa	Coefficient Of Thermal Expansion	Electrical Resistivity, (μohm - m)	Thermal Conductivity (J/-m-s-K)
Sn100 ^e	Sn/Cu/Co	228	7.4	28	Pure Sn = 23.5	0.123	82
Sn100C	Sn/Cu/Ni	227	7.4	32	Pure Sn = 23.5	0.13	64
SAC305	Sn96.5/Ag3.0/Cu0.5	217-221	7.39	52	Pure Sn = 23.5	0.15	64
Sn63/Pb37	Sn63/Pb37 Common Lead Alloy	183E	8.42	44	24.7	0.12	58

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Qualitek Lead Free Solder Paste

Qualitek's lead free solder paste formulations exhibit superior joint strength, excellent wettability, extraordinary print definition and tack life. The flux activity levels of these solder pastes exhibit excellent thermal stability and prevent thermal degradation when reflowed in an air atmosphere.

Qualitek's patent pending LF Green Solder Pastes are formulated to help avoid cross contamination between leaded and lead free solder pastes in a mixed production environment. Visit our website for complete details and an evaluation sample.

Solder Paste

Formulations:	DSP800LF	DSP700LF
Type	No-Clean Stencil or Dispense	Water-Soluble Stencil or Dispense
Flux Classification:	ROL1	ORH1
Copper Mirror	No removal	Complete Removal
Silver Chromate	Pass	Fail
Corrosion	Pass	Pass (cleaned)
SIR		
JSTD-004	Pass	Pass
Bellcore (Telecordia)	Pass	Pass
Electromigration	Pass	Pass
Metal Loading	88%/dispensing	89%/dispensing
Solder Ball Test	Pass	Pass
Stencil Life	>8 hrs	>8 hrs
Abandon Time	30-60 min.	30-60 min.

Liquid Flux For Lead Free Soldering

Qualitek fluxes eliminate skips and shorts often experienced in wave solder assembly. Formulations are available for automated wave soldering of both bare copper and plated circuit boards.

Liquid Fluxes For Lead Free Applications

Formulations:	355-35	392-35	737N	737NVF
Type	No-Clean VOC Free Flux	No-Clean Flux	Water-Soluble Flux	Water-Soluble VOC Free Flux
Flux Classification:	ORLO	ORLO	ORH1	ORH1
Copper Mirror	No removal	No removal	Complete removal	Complete removal
Silver Chromate	Pass	Pass	Fail	Fail
Corrosion	Pass	Pass	Pass (cleaned)	Pass (cleaned)
SIR				
JSTD-004	Pass	Pass	Pass	Pass
Bellcore (Telecordia)	Pass	Pass	Pass	Pass
Electromigration	Pass	Pass	Pass	Pass
Acid Value	41.0+/-2.0	45.0+/-1.0	----	----
Specific Gravity	1.007+/-0.010	0.810+/-0.005	0.846+/-0.006	1.010+/-0.010
Solid Content	4.0-5.0	4.0-5.0	16.0-18.0	12.0-15.0
pH (as is)	----	----	6.8-7.8	6.8-7.8

Flux Core Wire Solder

Formulations:	NC600	WS700
Type	No-Clean Wire Core	Water-Soluble Wire Core
Flux Classification:	RELO	ORH1
Copper Mirror	No removal	Complete removal
Silver Chromate	Pass	Fail
Corrosion	Pass	Pass (cleaned)
SIR		
JSTD-004	Pass	Pass (cleaned)
Bellcore (Telecordia)	Pass	Pass (cleaned)
Electromigration	Pass	Pass (cleaned)
Acid Value	190-210	120-130
Solder Spread	>130 mm ²	>130 mm ²



Lead Free Cored Solder Wire

Qualitek has developed a unique flux system designed specifically for the higher melting temperatures of lead free alloys. This system promotes fast wetting action and maximizes spread. Other cored wire flux types are also available.

Recommendations made by this company and its representatives are based upon test data, experiments, and experience believed to be reliable. No guarantee of accuracy is made. All products are sold upon the condition that the buyer will make his own tests and assume the responsibility for the suitability of the product under his application and service conditions. Statements made herein will vary according to the nature of the surfaces to which the product is applied, application technique, and service condition. We in no event assume liability beyond the purchase price of our products involved and make as a condition of sale that we will replace materials proven to be defective and reported in a timely fashion, but no later than six (6) months after shipment. No representative of the manufacturer and/or seller has the authority to alter or extend these conditions.