



**NC600 (Sn95/Ag5)  
LEAD FREE  
NO CLEAN  
SOLDER WIRE**

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**Description**

Delta Solder Wire NC600 is our no clean flux that promotes fast wetting action and maximum wetting spread. It is available in standard leaded alloys as well as high temperature lead-free alloys, such as Sn95/Ag5. NC600 contains a synthetic refined resin with a very effective activator so it performs like an RA type cored wire. NC600 exhibits virtually no spattering and conforms to J-STD-004B specifications.

Main Features

- ❑ Excellent wettability
- ❑ Sn95/Ag5 – high melting temperature alloy
- ❑ Hard non-conductive residues

**Technical Data**

Flux Classification	Specification	Test Method
	RELO	J-STD-004
<b>Copper Mirror</b>	No removal of copper film	IPC-TM-650 2.3.32
<b>Silver Chromate</b>	Pass	IPC-TM-650 2.3.33
<b>Corrosion</b>	Pass	IPC-TM-650 2.6.15
<b>SIR</b>		
J-STD-004, Pattern Down	2.26 x 10 <sup>11</sup>	IPC-TM-650 2.6.3.3
<b>Electromigration</b>	Pass	Bellcore GR-78-CORE 13.1.4
<b>Post Reflow Flux Residue</b>	55%	TGA Analysis
<b>Acid Value</b>	190-210	IPC-TM-650 2.3.13
<b>Flux Residue Dryness</b>	Pass	IPC-TM-650 2.4.47
<b>Spitting of Flux-Cored Solder</b>	0.3%	IPC-TM-650 2.4.48
<b>Solder Spread</b>	100 mm <sup>2</sup>	IPC-TM-650 2.4.46

**Wire Diameter**

Sn95/Ag5 alloy wire is available in a variety of diameters. The chosen diameter is based on application methods, pad size, and desired solder joint volume. Generally, the diameter of the wire should be slightly larger than the width/diameter of the joint or connection to be soldered. Below is a list of standard diameters.

**Standard wire diameters**

Diameter/Inch	0.125	0.092	0.062	0.050	0.040	0.032	0.028	0.025	0.020	0.015	0.010
Diameter/mm	3.18	2.33	1.57	1.27	1.01	0.81	0.71	0.63	0.51	0.38	0.25
Std.Wire Gauge	11	13	16	18	19	21	22	23	25	28	31
Tolerance, in.	+/-0.006	+/-0.005	+/-0.003	+/-0.003	+/-0.002	+/-0.002	+/-0.002	+/-0.002	+/-0.002	+/-0.002	+/-0.002

**Flux Percentage**

Qualitek utilizes a state-of-the-art automatic wire extrusion and wire drawing machines to manufacture consistent solder. The introduction of flux core in the wire extrusion process involves continual monitoring of flux percentage to ensure minimal flux voids and irregular wire. Typical flux percentage for lead free solder is **2.2-3.3%**.

**Physical Properties**

**Solder Composition**

Qualitek® Sn95/Ag5 is a high melting temperature lead-free alloy. Qualitek Sn95/Ag5 alloy conforms and exceeds the impurity requirements of J-STD-006C and all other relevant international standards.

<b>Typical Analysis</b>													
<b>Sn</b>	<b>Ag</b>	<b>Cu</b>	<b>Pb</b>	<b>Sb</b>	<b>Bi</b>	<b>In</b>	<b>As</b>	<b>Fe</b>	<b>Ni</b>	<b>Cd</b>	<b>Al</b>	<b>Zn</b>	<b>Au</b>
<b>Bal</b>	<b>4.5-5.5</b>	0.080 Max	0.070 Max	0.200 Max	0.100 Max	0.100 Max	0.030 Max	0.020 Max	0.010 Max	0.002 Max	0.005 Max	0.003 Max	0.050 Max

	<b>Sn95/Ag5</b>
Melting Point, °C	221 - 240
Hardness, Brinell	13.7 HB
Coefficient of Thermal Expansion	Pure Sn= 23.5
Density, lb./in. <sup>3</sup>	0.2668
Specific gravity, g/cm <sup>3</sup>	7.39
Electrical Resistivity (μΩ/cm)	13.7
Electric Conductivity (%IACS)	12.6

**Flux Residues & Cleaning**

NC600 is a no clean formulation; therefore, the residues do not need to be removed for typical applications. If residue removal is desired, the use of Everkleen 1005 Buffered Saponifier with a 5-15% concentration in hot 60 °C (140 °F) de-ionized water will aid in residue removal.

## **Storage & Shelf Life**

Solder wire storage should be in a 65-80 °F environment away from direct heat. We recommend using gloves when handling solder wire directly. Solder wire has an indefinite shelf life.

## **Packaging**

Qualitek flux-core wire and solid wire are packed in

12.5lb -box of ½ lb spools

25 lb -box of 1 lb spools

12.5kg -box of ½ kg spools

8 kg -box of 1kg spools

40 lb -box of 5 lb spools

20 lb -box of 20 lb spools

## **Disposal**

Delta Solder Wire NC600 lead free solder should be disposed of in accordance with state & local authority requirements.