



## NC601E (Sn100e) NO CLEAN DELTA® SOLDER WIRE

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## Description

### Flux Core

Delta® Solder Wire NC601E is a no clean, organic-based, cored solder wire that is available with both lead-containing alloys and lead-free alloys, such as Sn100e (Sn/Cu/Co). NC601E contains purely organic acid activators so spreads rapidly and leaves minimal residue. NC601E exhibits virtually no spattering and conforms to IPC-J-STD-004B.

#### Main Features

- ☐ Excellent wettability
- ☐ Non-tacky residue
- ☐ Silver-free alloy
- ☐ RoHS compliant

### Technical Data (Flux Extract)

	Specification	Test Method
<b>Color &amp; Appearance</b>	Light yellow solid	Visual
<b>Flux Classification</b>	ORLO	IPC-J-STD-004B
<b>Copper Mirror</b>	No removal of copper film	IPC-TM-650 2.3.32
<b>Corrosion</b>	Pass	IPC-TM-650 2.6.15
<b>SIR</b>	$>1 \times 10^8$ ohms	IPC-TM-650 2.6.3.3
<b>Post Reflow Flux Residue</b>	55%	TGA Analysis
<b>Acid Value</b>	280 - 320	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

Sn100e NC601E Delta Solder 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
Diameter/mm	3.18	2.33	1.57	1.27	1.01	0.81	0.71	0.63	0.51	0.38
Std.Wire	11	13	16	18	19	21	22	23	25	28
Gauge										
Tolerance, in.	+/-0.006	+/-0.005	+/-0.002	+/-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 **1.1 – 3.3%**.

## Physical Properties

### Solder Composition

Qualitek® has developed a no clean organic-based cored solder wire, NC601E, with our Sn100e (Sn/Cu/Co) alloy. Qualitek alloys conform to and exceed the impurity requirements of IPC-J-STD-006C.

Typical Analysis														
Sn	Ag	Al	As	Au	Bi	Cd	Co	Cu	Fe	In	Ni	Pb	Sb	Zn
Bal	0.100 Max	0.005 Max	0.030 Max	0.050 Max	0.100 Max	0.002 Max	0.03- 0.07	0.3- 0.7	0.020 Max	0.100 Max	0.010 Max	0.070 Max	0.200 Max	0.003 Max

	Sn100e
Melting Point, °C	228 E
Hardness, Brinell	9 HB
Coefficient of Thermal Expansion	Pure Sn= 23.5
Tensile Strength, Mpa	28
Density, g/cc	7.40
Electrical Resistivity (μohm-cm)	0.123
Thermal Conductivity (J/m-s-K)	82

### Flux Residues & Cleaning

NC601E 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**

Sn100e NC601E leaded solder wire should be disposed of according to all local, regional, national and international regulations.

Qualitek® and Delta® are brands of Qualitek International, Inc. For Health and Safety information refer to Safety Data Sheet.