



NC601 (Sn60/Pb40)  
NO CLEAN DELTA<sup>®</sup>  
SOLDER WIRE

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**Description**

**Flux Core**

Delta® Solder Wire NC601 is a no clean, organic-based, cored solder wire that is available with both lead-containing alloys and lead-free alloys. NC601 contains purely organic acid activators so spreads rapidly and leaves minimal residue. NC601 exhibits virtually no spattering and conforms to IPC-J-STD-004B.

Main Features

- ❑ Excellent wettability
- ❑ Non-tacky residue

**Technical Data (Flux Extract)**

Specification	Test Method
<b>Color &amp; Appearance</b> <b>Flux Classification</b>	Visual J-STD-004BB
<b>Copper Mirror</b>	IPC-TM-650 2.3.32
<b>Corrosion</b> <b>SIR</b>	IPC-TM-650 2.6.15 IPC-TM-650 2.6.3.3
<b>Post Reflow Flux Residue</b> <b>Acid Value</b>	TGA Analysis IPC-TM-650 2.3.13
<b>Flux Residue Dryness</b> <b>Spitting of Flux-Cored Solder</b>	IPC-TM-650 2.4.47 IPC-TM-650 2.4.48
<b>Solder Spread</b>	IPC-TM-650 2.4.46

**Wire Diameter**

Sn60/Pb40 NC601 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 Gauge	11	13	16	18	19	21	22	23	25	28
Tolerance, in.	+/-0.006	+/-0.005	+/-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 leaded solder is **1.1 – 3.3%**.

**Physical Properties**

**Solder Composition**

Qualitek has developed a rosin activated based core flux with alloy composition, Sn60/Pb40. Qualitek Sn60/Pb40 alloy conforms to and exceeds the impurity requirements of IPC-J-STD-006C.

<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>59.5</b> <b>-60.5</b>	0.100 Max	0.080 Max	Bal	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>Sn60/Pb40</b>
Melting Point, °C	183 - 188
Hardness, Brinell	16 HB
Coefficient of Thermal Expansion	23.9
Tensile Strength, kgf/cm <sup>2</sup>	535
Tensile Elongation, %	40
Density, g/cm <sup>3</sup>	8.50
Electrical Resistivity, (μΩ-cm)	15.3
Thermal Conductivity, W/m-K	49

**Flux Residues & Cleaning**

NC601 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**

Sn60/Pb40 NC601 leaded solder should be disposed of in accordance with federal, state and local authority requirements.