



RMA200 (Sn63/Pb37)  
R.M.A. DELTA®  
SOLDER WIRE

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**Description**

**Flux Core**

Delta Solder Wire RMA200 contains a rosin mildly activated core that is available with both lead-containing alloys and lead-free alloys. RMA200 has been formulated for use in high reliability electronic assembly where pure rosin core does not provide fast spreading and wetting action; and activated rosin residues may be electronically less reliable. RMA200 conforms to IPC-J-STD-004B specifications.

Main Features

- ❑ Excellent wettability
- ❑ Non-corrosive, non-conductive residues

**Technical Data (Flux Extract)**

Flux Classification	Specification	Test Method
	ROLO	J-STD-004
<b>Softening Point</b>	92 °C	
<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>		
J-STD-004, Pattern Down	2.82 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>	50%	TGA Analysis
<b>Acid Value (mgKOH/g)</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**

Sn63/Pb37 RMA200 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 mildly activated based core flux with alloy composition, Sn63/Pb37, which is a eutectic alloy. Qualitek Sn63/Pb37 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>62.5</b> <b>-63.5</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>Sn63/Pb37</b>		<b>Sn63/Pb37</b>
Melting Point, °C	183 E	Yield Strength, psi	3950
Hardness, Brinell	14 HB	Total Elongation,%	48
Coefficient of Thermal Expansion	24.7	Joint Shear Strength, at 0.1mm/min 20 °C	23
Tensile Strength, psi	4442	Joint Shear Strength, at 0.1mm/min 100 °C	14
Density, g/cm <sup>3</sup>	8.42	Creep Strength, N/mm <sup>2</sup> at 0.1mm/min 20 °C	3.3
Electrical Resistivity, (μΩ-cm)	14.5	Creep Strength, N/mm <sup>2</sup> at 0.1mm/min 100 °C	1
Electrical Conductivity, 10 <sup>4</sup> /ohm-cm	6.9	Joint Fatigue Cycle, 15N/mm <sup>2</sup> 20 °C	1100
		10N/mm <sup>2</sup> 100 °C	900

**Flux Residues & Cleaning**

RMA200 is a rosin mildly activated formulation containing non-corrosive residues, so residues do not need to be removed for typical applications. However, 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 2 years of 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**

Sn63/Pb37 RMA200 leaded solder should be disposed of in accordance with federal, state & local authority requirements.