



SOLDER CONNECTION

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Low Melt Point (Sn42/Bi58) Solid Solder Wire

DESCRIPTION

Qualitek Low Melt Point Sn42/Bi58 is designed as a lead-free alternative for Sn/Pb alloys for electronics assembly operations. The Qualitek Sn42/Bi58 alloy conforms and exceeds the impurity requirements of J-STD-006 and all other relevant international standards.

FEATURES AND BENEFITS

- Acceptable wetting & flowing characteristics
- Low melting point, prevents thermal degradation of heat sensitive components
- Low to non-toxic lead-free solder

TECHNICAL DATA

Typical Analysis

Sn	Ag	Cu	Pb	Sb	Bi	In	As	Fe	Ni	Cd	Al	Zn	Au
Bal	0.020 Max	0.050 Max	0.050 Max	0.050 Max	57.5- 58.5	0.050 Max	0.010 Max	0.010 Max	0.005 Max	0.001 Max	0.001 Max	0.001 Max	0.002 Max

	Sn42/Bi58	Sn63/Pb37
Melting Point, °C	138 E	183 E
Hardness, Brinell	22HB	14HB
Coefficient of Thermal Expansion	13.8	24.7
Tensile Strength, psi	5400	4442
Density, g/cc	8.72	8.42
Electrical Resistivity , (μohm-cm)	34.5	14.5
Electrical Conductivity, %IACS	4.5	11.9

	Sn42/Bi58	Sn63/Pb37
Yield Strength, psi	7119	950
Total Elongation,%	46	48
Shear Strength MPa, at 1mm/min 20 °C	27	34.5
Shear Strength MPa, at 1mm/min 100 °C	15.6	21.6
Fatigue Strength, Mpa at 1000 cycles 20 °C	16	16.2
Fatigue Strength, Mpa at 1000 cycles 100 °C	7.9	10.2
Specific Heat (J/g)	46	45

WIRE DIAMETER

Qualitek Low Melt Point Sn42/Bi58 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

Diameter/in	0.048*	0.032*
Diameter/mm	1.20	0.80

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. Solid Solder wire has an indefinite shelf life.

DISPOSAL

Sn42/Bi58 Solid Wire solder should be disposed of in accordance with state & local authority requirements.

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