



Sn42/Bi58 Solid SOLDER WIRE

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Physical Properties

Solder Composition

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

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	138E	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	3950
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

Features & Benefits

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

Available Wire Diameters

Diameter/in	0.079	0.062	0.048*	0.040*	0.032*	0.028	0.024
Diameter/mm	2.00	1.57	1.20	1.00	0.80	0.70	0.60

* These diameters are available in stock. All other diameters are special order.

Storage & Shelf Life

Solder wire storage should be in a 65-80°F environment away from direct heat. When handling solder wire, it is recommended to wear appropriate gloves. Solder wire has an indefinite shelf life.

Disposal

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

Packaging

500 gram per Box