



QUALITEK



**Sn42/Bi58
LEAD FREE
SOLDER BAR**

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Physical Properties

Solder Composition

Qualitek® Sn42/Bi58 solder bar is designed as a low temperature, lead-free alternative for electronics assembly operations. Qualitek Bi58 alloy conforms and exceeds the impurity requirements of IPC-J-STD-006C and all other relevant international standards.

Typical Analysis													
Sn	Ag	Cu	Pb	Sb	Bi	In	As	Fe	Ni	Cd	Al	Zn	Au
Bal	0.100 Max	0.080 Max	0.070 Max	0.200 Max	57.5- 58.5	0.100 Max	0.030 Max	0.020 Max	0.010 Max	0.002 Max	0.005 Max	0.003 Max	0.050 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	8766	4442
Density, g/cc	8.56	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

Storage & Shelf Life

Solder bar storage should be in a 65-80°F environment away from direct heat. Solder bar has an indefinite shelf life.

Packaging

Sn42/Bi58 solder bar is available in gram quantities with varying weights.

Disposal

Sn42/Bi58 solder bar should be disposed of in accordance with federal, state and local authority requirements.

Qualitek® is a brand of Qualitek International, Inc.