



Sn42/Bi58  
SOLID  
SOLDER WIRE

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**Solder Composition**

Delta® Solder Wire Sn42/Bi58 is designed as a low temperature, lead-free alloy for heat sensitive electronics assembly applications. Qualitek® Bi58 alloy conforms and exceeds the impurity requirements of IPC-J-STD-006C and all other relevant international standards.

| <b>Typical Analysis</b> |              |              |              |              |               |              |              |              |              |              |              |              |              |
|-------------------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Sn                      | Ag           | Cu           | Pb           | Sb           | Bi            | In           | As           | Fe           | Ni           | Cd           | Al           | Zn           | Au           |
| Bal                     | 0.100<br>Max | 0.080<br>Max | 0.070<br>Max | 0.200<br>Max | 57.5-<br>58.5 | 0.100<br>Max | 0.030<br>Max | 0.020<br>Max | 0.010<br>Max | 0.002<br>Max | 0.005<br>Max | 0.003<br>Max | 0.050<br>Max |

|                                  | Sn42/Bi58 | Sn63/Pb37 |   | Sn42/Bi58 | Sn63/Pb37 |
|----------------------------------|-----------|-----------|---|-----------|-----------|
| Melting Point, °C                | 138 E     | 183 E     | Yield Strength, psi                         | 7119      | 3950      |
| Hardness, Brinell                | 22HB      | 14HB      | Total Elongation,%                          | 46        | 48        |
| Coefficient of Thermal Expansion | 13.8      | 24.7      | Shear Strength MPa, at 1mm/min 20 °C        | 27        | 34.5      |
| Tensile Strength, psi            | 8766      | 4442      | Shear Strength MPa, at 1mm/min 100 °C       | 15.6      | 21.6      |
| Density, g/cc                    | 8.56      | 8.42      | Fatigue Strength, Mpa at 1000 cycles 20 °C  | 16        | 16.2      |
| Electrical Resistivity (μohm-cm) | 34.5      | 14.5      | Fatigue Strength, Mpa at 1000 cycles 100 °C | 7.9       | 10.2      |
| Electrical Conductivity, %IACS   | 4.5       | 11.9      | 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 | 0.048* | 0.032* |
| Diameter/mm | 1.20   | 0.80   |

**Storage & Shelf Life**

Sn42/Bi58 solder wire should be stored at 65 - 80°F, away from direct heat. We recommend using appropriate gloves when handling solder wire directly. Solid solder wire has an indefinite shelf life.

**Packaging**

500 gram (0.5 Kilogram) per Box

**Disposal**

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

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