euromat INDUSTRIAL SURFACE SOLUTIONS	**QM-Handbuch** **Technisches Datenblatt** **- S-Bond® 140-1 -**	**Version: 15.06.2020** **ISO 9001**

Description

S-Bond® 140-1 is a Sn-Bi-Ag-Ti based active solder. Well suited for the use of ultrasonic energy. It can join a range of metals and ceramic materials.

Melting Range

- Solidus Temperature: 140° C (284° F)
- Liquidus Temperature: 155° C (311° F)
- Joining Temperature: 155 – 160° C (311 - 320° F)

Physical Properties

- Density: 0.3 lbs/in^3 (8.4 g/cc)
- Thermal Coefficient of Expansion from R.T. to 300° F (25 – 150° C): ~15 x 10^{-6}/ °C
- Electrical Resistivity (ρ): 2.0 µ-Ω-m
- Thermal Conductivity:
  - Intrinsic: 30 - 35 W/mK

Mechanical Properties

- Tensile Strengths: UTS 0,2% Y.S.
  - 25 – 75 ° C 5.8 ksi (40 MPa)

- Joint Strengths (R.T.):

Aluminium to Aluminium	2.9 – 4.35 ksi (20 – 30 MPa)
Steel to Steel	2.9 – 7.54 ksi (20 – 52 MPa)
Stainless Steel	2.61 – 3.63 ksi (18 – 25 MPa)
Copper to Copper	2.9 – 5,8 ksi (20 – 40 MPa)
Aluminium to Steel	4.79 – 6,52 ksi (33 – 45 MPa)
Al:SiC to Metals	4.35 – 5.95 ksi (30 – 41 MPa)
Glass to Metals	3.48 – 5,08 ksi (24 – 35 MPa)

Joint Sealing Capabilities

- Hermetic Seal on most materials 5 x 10^{-10} mbar*L/sec (helium leak rate)

EUROMAT GMBH does not guarantee the correctness of the above values. Values were determined in the laboratory and may vary depending on the batch. We recommend that you check the values yourself after receipt of the goods.