

S-Bond Technologies, LLC	S-Bond[®] 400 Alloy	Property Bulletin
	Issue Date: 06/04	Bulletin No. 14.01.07

Compositional Range (w/o)

Zn-4Ag-2Al (with Ga and Ce)

Melting Range

- Solidus Temperature: 752° F (400° C)
- Liquidus Temperature: 788° F (420° C)
- Joining Temperature: 770 - 810° F (410 - 430° C)

Physical Properties

- Density: 0.250 lbs/in³ (7.1 g/cc)
- Thermal Coefficient of Expansion from R.T. to 300° F (25 – 150° C): ~32 x 10⁻⁶/°C
- Electrical Resistivity (ρ): TBD
- Thermal Conductivity: ~ 80 W/mK

Mechanical Properties / Joint Shear Strengths

- Tensile Strengths: UTS
 - 25° C..... 10.0 ksi (69 MPa)
 - 75° C..... 8.5 ksi (58 MPa)
 - 175° C..... 7.8 ksi (54 MPa)
 - 390° C..... 5.5 ksi (38 MPa)
- Joint Strengths (@ R.T.):
 - Aluminum to Aluminum 12 - 16 ksi (80 – 110 MPa)
 - Steel to Steel 7.2 – 8.7 ksi (50 – 60 MPa)
 - Stainless Steel (Type 304) 4.3 – 7.2 ksi (30 – 50 MPa)
 - Copper to Copper 10 – 11.6 ksi (70 – 80 MPa)
 - Aluminum to Steel 7.2 – 8.7 ksi (50 – 60 MPa)
 - Al:SiC to Metals 5.8 – 7.2 ksi (40 - 50 MPa)

Joint Sealing Capabilities

- Kovar to Alumina 3.8 x 10⁻⁹ atmospheres / cc sec
- SiC to Invar 5 x 10⁻¹⁰ mbar*L/sec (helium leak rate)

Corrosion

- Other corrosion data, updates or special requests.... Please call.