

Property Bulletin

S-Bond™ Alloy 400	Issue Date: 11/00
	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) : TDB
- Thermal Conductivity: ~ 80 W/mK

Mechanical Properties / Joint Shear Strengths

- Tensile Strengths: UTS
 - > 25°C.....5.0 ksi (34 MPa)
 - > 75°C.....5.5 ksi (37 MPa)
 - > 175°C.....4.0 ksi (27 MPa)
 - > 390°C3.0 ksi (20 MPa)
- Joint Strengths (@ R.T.):
 - Aluminum to Aluminum: 2.9 - 4.3 ksi (20 - 30 MPa)
 - Steel to Steel: 2.9 - 7.5 ksi (20 - 52 MPa)
 - Stainless Steel (Type 304): 2.6 - 3.6 ksi (18 - 25 MPa)
 - Copper to Copper: 2.9 - 5.8 ksi (20 - 40 MPa)
 - Aluminum to Steel: 4.8 - 6.5 ksi (33 - 45 MPa)
 - Al:SiC to Metals: 4.4 - 6.0 ksi (30 - 41 MPa)
 - Glass / Metal: TBD

Joint Sealing Capabilities

- Kovar to Alumina: 3.8x10⁻⁹ atmospheres / cc sec
- SiC to Invar: 5 x 10⁻¹⁰ mbar*L/sec (helium leak rate)
- Glass to metal 4.1 x 10⁻⁹ atmospheres / cc sec

Corrosion

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

