

# COTRONICS RESBOND HIGH TEMP. ADHESIVE PROPERTIES

The following criteria is useful in selecting the optimum ceramic adhesive. These criteria are offered as a general guide and should be followed in the approximate order listed. A final manufacturing selection is then based on the results obtained. If several adhesives are indicated for a specific application, we would recommend a comparative evaluation be made.

1. Choose maximum temperature required.
2. Match thermal expansion between materials to be bonded.
3. Select the required electrical properties.
4. Select the bond strength requirements.
5. Check for porous surfaces (is a primer or pre-coat required).
6. Check moisture or humidity requirements.

7. Choose from the following manufacturing requirements:
  - A) One component, cures by evaporation.
  - B) Two component, chemical set.
  - C) Viscosity and Dispensability.
  - D) Cure time for handling strength.
  - E) Production Requirements.

COMPOSITION	Alumina			Zirconia	Zircon	Mica	Magnesia	Silica			Graphite	Metallic					
<b>Resbond</b>	901	903HP	908	920	989	904	940	907	906	919	905	940LE	7030	931	950	952	954
<b>DESCRIPTIIONS</b>	Fiber Base	Hi-Bond Strength	Moisture Proof.	Therm Cond.	General Purpose	Ultra Temp.	Fast Set	Industrial Strength	High Expan.	High Resist.	Low Exp.	Fast Set	High Strength	Graphite	Alum. Metal	Nickel Metal	Stainless Steel
<b>Service Temp. (°F)</b>	2600	3250	3000	3000	3000	4000	2000	2300	3000	2800	2500	2500	1800	5400	1200	2000	2000
<b>Base</b>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>	Zircon	MICA	MgO	MgO	SiO <sub>2</sub>	SiO <sub>2</sub>	SiO <sub>2</sub>	Carbon	Al	Nickel	316SS
<b>Compressive Strength (psi)</b>	1200	7000	3000	4500	3000	6000	4000	3500	3000	4500	3200	3500	5000	3000	4000	5000	4500
<b>Flexural Strength (psi)</b>	600	3500	1100	450	1100	3000	1800	1250	1500	450	2100	2100	1450	1500	3000	3000	2500
<b>Thermal Expansion (10<sup>-6</sup> / °F)</b>	4	4	4.5	4.5	4.5	4.1	4.5	4.5	7	2.6	0.3	0.4	7.5	4.1	10	4	10
<b>Thermal Conductivity (BTU - in/ Hr. °F Ft)</b>	2	40	15	15	15	15	8	6	40	4	10	5	8.3	60	44	14	10
<b>Dielectric Strength (volts / mil)</b>	200	250	200	270	200	250	125	300	250	270	200	125	100	COND.	COND.	COND.	COND.
<b>Volume Resistivity (ohm-cm)</b>	10 <sup>12</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>11</sup>	10 <sup>8</sup>	10 <sup>8</sup>	10 <sup>8</sup>	10 <sup>9</sup>	10 <sup>9</sup>	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>8</sup>	10 <sup>9</sup>	COND.	COND.	COND.	COND.
<b>Components</b>	1	1	2	2	1	1	2	1	2	2	2	2	2	2	2	2	2
<b>Mix Ratio</b>	N/A	N/A	100/33	100/14	N/A	N/A	100/28	N/A	100/42	100/13	100/60	100/45	100/20	100/35	100/60	100/120	100/25
<b>Consistency</b>	Paint	Paint	Paste	Paste	Paint	Paint	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste
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