

# RESBOND HIGH TEMPERATURE 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.

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| 1. Choose maximum temperature required.                    | 5. Check for porous surfaces:<br>(Is a precoat or primer required) | a) one component evaporation curing |
| 2. Match thermal expansion between materials to be bonded. | 6. Check moisture or humidity requirements.                        | b) two component chemical set       |
| 3. Select required electrical properties.                  | 7. Choose from the following manufacturing Requirements;           | c) Viscosity and Dispensability     |
| 4. Select bond strength requirements.                      |  | d) cure time for handling strength  |
|  |  | e) production requirements          |

RESBOND	901	903HP	904	905	906	907	918	919	920	931	940	944	950	952	954	989
FEATURE	Fiber Base	High Bond Strength	Ultra Temp.	Low Expan.	High Expan.	Industrial Strength	One Comp.	High Resist.	Therm. Cond.	Graphite	Fast Set	High Strength	Aluminum Composite	Nickel Comp.	Stainless Comp.	General Purpose
Service Temp. °F	2600	3250	4000	2500	3000	2300	2500	2800	3000	5400	2000	1800	1200	1600	2000	3000
Base	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>	SiO <sub>2</sub>	MgO	MICA	SiO <sub>2</sub>	MgO	Al <sub>2</sub> O <sub>3</sub>	Carbon	Zircon	SiO <sub>2</sub>	Al	Nickel	316SS	Al <sub>2</sub> O <sub>3</sub>
Compressive Strength (psi)	1200	7000	6000	3200	3000	3500	3500	4500	4500	3000	4000	5000	5000	5000	4500	3000
Flexural Strength (psi)	600	3500	3000	2100	1500	2000	600	450	450	1500	500	1450	3000	3000	2500	1100
Thermal Expansion (10 <sup>-6</sup> / °F)	4	4	4.1	0.3	7	4.3	6	2.6	4.5	4	4.5	7.5	11	4	10	4.5
Thermal Conductivity (BTU - in/ Hr °F Ft <sup>2</sup> )	2	40	10	10	40	6	8	4	15	60	3.4	8.3	44	14	10	9
Dielectric Strength (volts / mil)	200	250	250	200	250	300	100	270	270	COND.	125	100	COND.	COND.	COND.	200
Volume Resistivity (ohm-cm)	10 <sup>12</sup>	10 <sup>10</sup>	10 <sup>8</sup>	10 <sup>11</sup>	10 <sup>9</sup>	10 <sup>9</sup>	10 <sup>8</sup>	10 <sup>11</sup>	10 <sup>11</sup>	COND.	10 <sup>9</sup>	10 <sup>9</sup>	COND.	COND.	COND.	10 <sup>8</sup>
Components	1	1	1	2	2	1	1	2	2	2	2	2	2	2	2	1
Consistency	Paint	Paint	Paint	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paste	Paint