

# ULTRA HI-TEMP ADHESIVES

## For Electronic, Metallurgical and Structural Applications

### 4000°F - RESBOND™ 904

#### Zirconia Adhesive

Resbond™ 904 extreme temperature adhesive surpasses the capabilities of most materials to provide 4000°F service.

Resbond™ 904 is a smooth, creamy paste that is easily applied and air dried to form a hard surface.

Resistant to molten metals, most chemicals and solvents, oxidizing and reducing atmospheres.

It is ideal for bonding and forming electrical, oxidation erosion and liquid metal resistant coatings for ceramics, graphite and thermocouple tubes.

#### Users Report:

- Bonded exhaust lines to a Thermogravimetric Analyzer's reaction chamber and used at 3400°F under a vacuum.
- Bonded Silica Cloth to furnace tubes for use at 2600°F in a Semi-conductor's clean room.
- Coated Aluminum Metal Panels on a Spacecraft and successfully protected the metal panels from High Intensity X-Ray radiation.

**Applications include:** welding, brazing, bonding, electrical seals, thermocouple protection, instruments, high temp. facing for brick, electrical potting, liquid metal handling, etc.

### 5400°F - 931 Graphite Adhesive

#### 99% Pure Graphite

Resbond™ 931 bonds Graphite or carbon components for use to 3000°C with 99% pure graphite. Just apply and cure at 250°F.

931 has excellent adhesion to graphite, and other porous surfaces, forming graphite to graphite bonds with strengths measuring in excess of 2500 psi.

It is electrically conductive and resistant to reducing atmospheres, most chemicals and solvents.

Resbond™ 931 is ideal for repairing broken or cracked graphite trays, components, fixtures, dies; filling and rebuilding crevices, cracks, worn areas and bonding graphite cloths, felts, boards, etc.

#### Users Report:

Resbond™ 931 repaired a 20" dia. x 24" high, cracked, induction heating susceptor. The susceptor heated uniformly after the repair. Resbond™ 931 Graphite adhesive doubled the life of this expensive part.

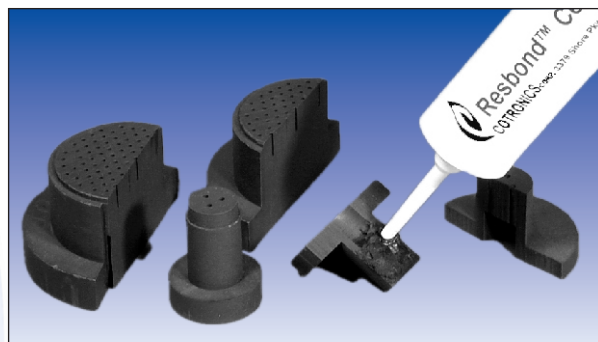
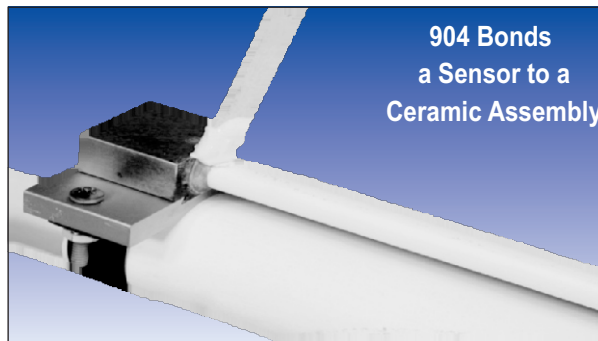
#### 2500°F - 931C Ceramic Bonded Graphite

Resbond™ 931C has excellent adhesion to graphite, metals, glass, ceramics and non-porous parts. Its easy, just re-mix, apply and let dry. 931C cures at room temp. without heat.

#### Graphite Sealer

Resbond™ 931S Sealer can be used to reduce porosity, seal surfaces and increase the wear resistance and durability of graphite parts.

**Users Report:** Resbond™ 931S sealed the porous surface of graphite parts doubling the life of heat treating trays. 931S stopped dusting of graphite fixtures.



931 Forms a Pure Graphite bond in a Complex Graphite assembly

| Resbond™  | 904      | 931        | 931C       |
|---|----------|------------|------------|
| Major Constituent                                     | Zirconia | Graphite   | Graphite   |
| Maximum Temperature                                   | 4000°F   | 5400°F*    | 2500°F*    |
| Purity (%)  | 95       | 99         | 90         |
| Thermal Expansion (x10 <sup>6</sup> /°F)              | 4.10     | 4.10       | 4.10       |
| Thermal Conductivity (BTU-in/hr.°F ft. <sup>2</sup> ) | 10       | 60         | 40         |
| Compressive Strength (psi)                            | 6000     | 3000       | 4200       |
| Flexural Strength (psi)                               | 3000     | 1500       | 1800       |
| Dielectric Strength (volts/mil)                       | 250      | Conductive | Conductive |
| Color   | Tan      | Black      | Black      |
| Components  | 1        | 2          | 1          |
| Mix Ratio   | N/A      | 100:35     | N/A        |
| Cure @ R.T. (Hours)                                   | 2-4      | 1-2 @ 250  | 2-4        |
| Consistency   | Paint    | Paste      | Paste      |

\*Inert Atmosphere

- Cat No.                      Size**
- Resbond™ 904-1 . . . . . Pint
- Resbond™ 904-2 . . . . . Quart
- Resbond™ 904T-1 . . . . . Thinner (Pint)
- Resbond™ 931-1 . . . . . Pint
- Resbond™ 931-2 . . . . . Quart
- Resbond™ 931-3 . . . . . Gallon
- Resbond™ 931T-1 . . . . . Thinner (Pint)
- Resbond™ 931S-1 . . . . . Sealer (Pint)
- Resbond™ 931C-1 . . . . . Pint
- Resbond™ 931C-2 . . . . . Quart
- Resbond™ 931CT-1 . . . . . Thinner (Pint)