

# 500°F THERMALLY CONDUCTIVE ADHESIVE

## For High Power Applications

### 500°F DURALCO™ 132

*Just Mix and Apply*

*Cures at Room Temperature*

*Provides Fast Heat Transfer*

*Ideal for any Industrial, Electrical or Electronic Application*

Duralco thermally conductive adhesives combine Cotronics' unique, high temperature resins with highly conductive fillers to form thermally conductive, adhesive bonds with continuous service up to 500°F.

Easy to use. Just mix and apply.

100% solids formulations. No volatiles. No VOC's.

Duralco 132 has excellent adhesion to metals, glass, ceramics, and plastics.

Offers excellent resistance to chemicals solvents and moisture.

Provides the heat dissipation required for many high temperature electronic and industrial applications.

#### Users Report:

- Duralco 132 dissipates heat in a semiconductor device.
- Duralco 132 transfers the heat generated in high power devices and provides for efficient cooling.
- Duralco 132 bonds electrical heating elements for fluid heating.

Applications include: bonding and assembling heating coils, cooling coils, heating elements, heat sinks, reaction vessels, semi-conductors, rectifiers, power supplies, replacement for soldering and welding, etc.

Duralco 132P is commonly used as a heat tracing adhesive which is used to bond heating or cooling tubing to equipment. Its' non sag formulation and room temperature curing, provides for the most efficient placement of the heating or cooling coils.

Duralco 132 is the ideal choice for high temperature, high power electronic or industrial applications requiring high thermal conductivity.

#### Availability:

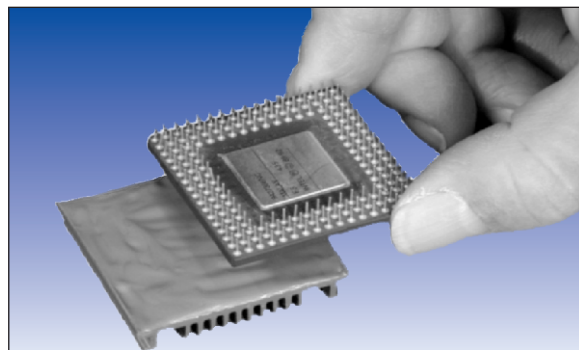
Cat. No.	Description	Temp.
Duralco 132-1.....	16 oz. Kit .....	500°F
Duralco 132-2.....	32 oz. Kit .....	500°F
Duralco 132IP-1.....	16 oz. Kit .....	500°F
Duralco 132IP-2.....	32 oz. Kit .....	500°F
Duralco 132P.....	16 oz. Kit .....	500°F
Duralco 132P-IP.....	16 oz. Putty.....	500°F

#### Pre-Measured Kits

*Each Unit Contains: 1 jar of resin, 1 syringe of hardener and 1 mixing stick. (See page 19 for details)*

EE 132-10.....	10 - 10gm units/box
EE 132-25.....	10 - 25gm units/box
EE 132IP-10.....	10 - 10gm units/box
EE 132IP-25.....	10 - 25gm units/box

**Quantity Prices & Custom Formulations**  
Available on Request



**Duralco 132 Dissipates Heat in  
A Semi Conductor Device**



**Duralco 132 Bonds Electrical  
Heating Element for Fluid Heating**

Physical Properties	132	132IP
Maximum Temp	500°F	500°F
Components - Color 2	2-Grey	2-Grey
Viscosity (cps)	15,000	43,000
Hardness (Shore D)	75	75
Flexural Strength (psi)	1,150	1,600
Compressive Strength (psi)	6,000	6,350
Thermal Conductivity (BTU-in/Hr. Ft <sup>2</sup> °F)	40	40
Thermal Expansion (10 <sup>-5</sup> /°C)	4.10	4.10
Volume Resistivity (ohm-cm)	10 <sup>6</sup>	10 <sup>6</sup>
Heat Distortion (°C)	210	210
Thermal Stability (%1000 hr @ 200°C)	0.20	0.20
Shrinkage (% max.)	0.80	0.80
Moisture Absorption (30 Days %)	0.20	0.20
Mix Ratio (R/H)	100/8	100/8
Cure (Hrs. @ R. T.)	16-24*	16-24*

\* Cures can be accelerated with mild heat.

# 600°F THERMALLY CONDUCTIVE ADHESIVES

## For Electrical and Industrial Applications

Duralco Thermally Conductive adhesives and potting compounds provide the heat dissipation required for many High Temperature Electronic and Industrial applications.

These ultra temp. adhesives combine Cotronics' unique polymer system and special thermally conductive fillers to provide continuous service up to 650°F.

Duralco Conductive Adhesives have excellent adhesion to glass, ceramics, metals and plastics.

Resistant to most chemicals and solvents.

They are ideal for all high temperature applications.

### Applications Include:

- Removing the heat generated in many electronic applications including semi-conductors, rectifiers, high power devices, etc.
- Heat transfer applications, including bonding copper coils to reaction vessels for heating and or cooling. Heat tracing adhesive. etc.
- Fabrication of heated, plastic forming tools, molds, etc.

Duralco™	128	132	133	134	135
<b>Maximum Temp</b>	<b>500°F</b>	<b>500°F</b>	<b>600°F</b>	<b>500°F</b>	<b>500°F</b>
<b>Major Constituent</b>	<b>Ceramic</b>	<b>Aluminum</b>	<b>Aluminum</b>	<b>Ceramic</b>	<b>Aluminum</b>
<b>Features</b>	Hi Electrical Resistance	Hi Thermal Conductivity	High Temperature	Electrically Resistant Grease	Thermally Conductive Grease
Volume Resistance (ohm-cm.)	10 <sup>15</sup>	10 <sup>8</sup>	10 <sup>8</sup>	10 <sup>16</sup>	N. A.
Thermal Conductivity (BTU-in/Hr. F <sup>2</sup> -F)	20	40	40	35	40
Viscosity (cps)	79,000	15,000	36,500	Grease	Grease
Color	Tan	Silver	Silver	Tan	Gray
No. of Components	2	2	2	1	1
Mix Ratio	100/5	100/8	100/30	N. A.	N. A.
Cure Cycle (Hrs. @ 75°F)	16 - 24*	16 - 24*	4 hrs. @ 250	N. A.	N. A.

\* Cures can be accelerated with mild heat.



**Duralco 132 Dissipates Heat in a Semiconductor Device**

### Duralco 128 - 500°F Ceramic Based

Duralco 128 is highly thermally conductive, electrically resistant adhesive and potting compound.

The ceramic fillers are carefully chosen to provide high thermal conductivity and high dielectric strength.

Just mix the resin and hardener, apply and cure at room temp. Curing may be accelerated with mild heat.

### Duralco 132 - 500°F Aluminum Based

Duralco 132 is an Aluminum Metal Filled Epoxy that cures at room temperature to form machinable, thermally conductive bond lines.

Duralco 132 provides the maximum heat transfer available in a 500°F epoxy system.

Can be supplied as a non-sag putty, Duralco 132P, for heat tracing applications.

Users report 132 bonds copper coils to vessels for rapid heating and cooling in a critical chemical process.

Used for bonding, assembling and heat tacking applications.

Cat. No.	Description	Temp.
Duralco 128.....	8 oz. ....	500°F
Duralco 132-1.....	16 oz. ....	500°F
Duralco 132-2.....	32 oz. ....	500°F
Duralco 132IP-1.....	16 oz. ....	500°F
Duralco 132P.....	16 oz. ....	500°F
Duralco 132P-IP.....	16 oz. ....	500°F
Duralco 133.....	16 oz. ....	600°F
Duralco 134.....	8 oz. ....	500°F
Duralco 135.....	4 oz. ....	500°F
Duralco 135.....	8 oz. ....	500°F

Quantity Prices, Special Packing on Request

### Duralco 133 - 600°F Aluminum Based

Duralco 133 is a two component, heat curing, Aluminum Filled, Conductive Epoxy.

Duralco 133 combines the excellent properties of Duralco 132 with Cotronics' higher temp. epoxy systems making it suitable for applications requiring up to 600°F service.

Cures with mild heat to form thermally conductive bond lines and heat transfer medium.

Duralco 133 is suitable for high temperature tooling. It is readily machinable and ideal for all kinds of repairs and as a construction material.

### Duralco 134 - 500°F Ceramic Based Grease

Duralco 134 thermally conductive grease, is a non-hardening, electrically insulating and thermally conductive grease. It is ideal for use between components and heat sinks.

Users Report Duralco 134 replaced silicone based grease in manufacturing of high end digital cameras.

Duralco 134 retains its paste like consistency, enabling parts to be easily removed and replaced. Will not dry out even after long periods of time. Usable to 500°F.

### Duralco 135 - 500°F Aluminum Based Grease

Duralco 135 is filled with an ultra fine, aluminum metal powder to provide the maximum possible heat transfer rate in a non hardening grease.

Used in delicate military applications where excess heat build up can cause serious failures.

Duralco 135 is commonly used in many industrial applications where electrical resistance is not critical.