

Aremco offers a broad line of electrically and thermally conductive materials which provide solutions to a variety of electrical, electronic and thermal design problems throughout industry...

## PRODUCT HIGHLIGHTS

### Aremco-Bond™ 525

- Electrically Conductive, Silver-Filled, One-Part Epoxy Paste.
- Good Chemical Resistance and Mechanical Strength to 340 °F.

### Aremco-Bond™ 556 & 556-LV

- Electrically Conductive, Silver-Filled Epoxy Systems.
- Good Corrosion Resistance and Mechanical Strength to 340 °F.
- Paste and Low Viscosity Systems Available.

### Pyro-Duct™ 597-A & 597-C

- Electrically and Thermally Conductive, Silver-Filled, One-Part Systems.
- Inorganic System for Adhesive (-A) & Coating (-C) Applications to 1700 °F.

### Pyro-Duct™ 598-A & 598-C

- Electrically and Thermally Conductive, Nickel-Filled, One-Part Systems.
- Inorganic Coating for Adhesive (-A) & Coating (-C) Applications to 1000 °F.

### Aremco-Bond 614

- Electrically Conductive, Nickel-Filled, Economical, Two-Part Epoxy.
- Excellent Chemical Resistance and Mechanical Strength to 360 °F.

### Aremco-Bond 616

- Electrically Conductive, Silver-Filled, Two-Part Epoxy.
- Excellent Chemical Resistance and Mechanical Strength to 360 °F.



Pyro-Duct™ 598-C metallizes handbag accessory for plating.



Pyro-Duct™ 597-C metallizes ceramic tubes.

PROPERTIES		ELECTRICALLY AND THERMALLY CONDUCTIVE								
Product Number		525	556	556-LV	597-A	597-C	598-A	598-C	614	616
Handling & Curing	Filler	Silver Flake	Silver Flake	Silver Flake	Silver Flake	Silver Flake	Nickel Flake	Nickel Flake	Nickel Flake	Silver-Coated Glass Spheres
	Mix Ratio by Weight, resin:hardener	NA	1:1	100:4	NA	NA	NA	NA	1:1	1:1
	Mixed Specific Gravity, gms/cc @ 25 °C	1.85	2.8	2.8	2.3	2.1	2.87	1.5	1.80	1.53
	Mixed Viscosity, @ 25 °C, cps	Paste	37,500	5,000	Paste	Paste	22,000	480	103,500	57,000
	Pot Life, 100 gm mass @ 25 °C, hrs	N/A	1	1	N/A	N/A	N/A	N/A	0.75	0.75
	Recommended Cure, hr/°F	2/300	24/RT	24/RT	2/RT + 2/200	2/RT + 2/200	2/RT + 2/200	2/RT + 2/200	8/RT	8/RT
Alternate Cure, hr/°F	6/250	4/170 or 2/210	4/170 or 2/210	—	—	—	—	2/100, 1/150, or 0.5/200	2/100, 1/150, or 0.5/200	
Cured Properties	Temperature Resistance, °F (°C)	340 (171)	340 (171)	340 (171)	1700 (927)	1700 (927)	1000 (538)	1000 (538)	360 (182)	360 (182)
	CTE, in/in/°F x 10 <sup>6</sup> (°C)	29.0 (52.2)	32.2 (58.0)	22.8 (41.0)	9.6 (17.3)	9.6 (17.3)	6.5 (11.7)	6.5 (11.7)	23.3 (42.0)	26.7 (42.0)
	Thermal Conductivity, Btu-in/hr-ft <sup>2</sup> -°F	62.2	65.0	65.0	63.1	63.1	17.9	17.9	18.3	28.0
	Tensile Shear Strength, psi <sup>①</sup>	2,500	1,500	1,100	—	—	—	—	2,500	1,900
	Volume Resistivity, ohms-cm	0.01	0.0009	0.0008	0.0002	0.0002	0.005	0.005	0.025	0.005
	Dielectric Strength, volts/mil	—	—	—	—	—	—	—	—	—
	Chemical Resistance	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
	Color	Silver	Silver	Silver	Silver	Silver	Dark Gray	Dark Gray	Dark Gray	Tan
<b>Reference Note</b> ① Tested according to ASTM D1002-94 at 25 °C. This is a standard test method for determining the shear strength of single lap-joint metal coupons in tension loading.		<b>Application Notes</b> <b>Surface Preparation:</b> All surfaces must be free of oil, grease, dirt, corrosives, oxides, paint or other foreign matter. Sand blast non-porous surfaces, or etch using Aremco's Corr-Prep™ CPR2000. <b>Mixing:</b> Two-part adhesives can be pre-heated to 80-90 °F to facilitate mixing. Mix products thoroughly to a uniform consistency. <b>Application:</b> Apply adhesive to both surfaces maintaining a glue line of less than 10 mils. Assemble parts and apply pressure to prevent warpage and reduce air entrapment. Refer to curing guidelines in above property chart.								

(See reverse for additional Thermally Conductive Materials)

## PRODUCT HIGHLIGHTS

### Aremco-Bond™ 568

- Thermally Conductive, Aluminum-Filled, 1:1 Epoxy Paste.
- Excellent Mechanical Strength to 400 °F.

### Aremco-Bond™ 805

- Thermally Conductive, Aluminum-Filled, Two-Part Epoxy Paste.
- Low Shrink Rate & Excellent Mechanical Strength to 570 °F.

### Aremco-Bond™ 860

- Thermally Conductive, Aluminum Nitride Filled, 1:1 Epoxy Paste.
- Exceptional Mechanical and Thermal Properties to 400 °F.



Aremco-Bond™ 568 bonds copper heat exchange tube to steel core.



Aremco-Bond™ 805 bonds aluminum heat sink to a power semiconductor device.

PROPERTIES		THERMALLY CONDUCTIVE		
Product Number		568 <sup>①</sup>	805	860 <sup>①</sup>
Handling & Curing	Filler	Aluminum	Aluminum	Aluminum Nitride
	Mix Ratio by Weight, resin:hardener	1:1	100:12	1:1
	Mixed Specific Gravity, gms/cc @ 25 °C	.85	1.66	1.9
	Mixed Viscosity, @ 25 °C, cps	Paste	11,000	40,000
	Pot Life, 100 gm mass @ 25 °C, hrs	4.0	≤ 1.0	4.0
	Recommended Cure, hr/°F	2/200	2/100 + 2/200	2/200
Cured Properties	Alternate Cure, hr/°F	24-48/RT	24-48/RT	24-48/RT
	Temperature Resistance, °F (°C)	400 (204)	572 (300)	400 (204)
	CTE, in/in/°F x 10 <sup>-6</sup> (°C)	33.0 (60.0)	25.0 (45.0)	18.7 (33.3)
	Thermal Conductivity, Btu-in/hr-ft <sup>2</sup> -°F	9.0	12.5	8.5
	Tensile Shear Strength, psi <sup>②</sup>	2,500	1,200	1,375
	Volume Resistivity, ohms-cm	1.0 x 10 <sup>5</sup>	1.0 x 10 <sup>5</sup>	1.0 x 10 <sup>15</sup>
	Dielectric Strength, volts/mil	80	50	250
	Chemical Resistance	Excellent	Good	Excellent
	Color	Gray	Gray	Gray

#### Reference Notes

- Available as fast-set or low viscosity systems. Add "LV" for low viscosity (eg. 568-LV), "FS" for fast-set (eg. 568-FS).
- Tested according to ASTM D1002-94 at 25 °C. This is a standard test method for determining the shear strength of single lap-joint metal coupons in tension loading.



Heat-Away™ 638 used as a heat transfer grease between a high temperature ballast resistor and an aluminum heat sink.

#### Reference Notes

- Heat-Away 641-EV is an electrically and thermally conductive grease that is rated for high vacuum systems. A vapor pressure table follows.

Temperature, °C (°F)	Vapor Pressure (Torr)
20 (68)	3 x 10 <sup>-14</sup>
50 (122)	2 x 10 <sup>-12</sup>
100 (212)	1 x 10 <sup>-9</sup>
200 (392)	2 x 10 <sup>-6</sup>

#### Application Notes

**Surface Preparation:** All surfaces must be free of oil, grease, dirt, corrosives, oxides, paint or other foreign matter. Sand blast or abrade non-porous surfaces, or etch using Aremco's Corr-Prep™ CPR2000.

**Mixing:** Two-part adhesives can be pre-heated to 80-90 °F to facilitate mixing. Mix products thoroughly to a uniform consistency. Aremco-Bond™ 568 is available in 50ml cartridges. Order 568-C 50ml Cartridge, 9910 6" Mixing Nozzle and 9850 Plunger or 9700 Mechanical Dispense Gun.

**Application:** Apply adhesive to both surfaces maintaining a glue line of less than 10 mils. Assemble parts and apply pressure to prevent warpage and reduce air entrapment. Refer to curing guidelines in above property chart.

## HEAT-AWAY™ GREASES

Aremco's Heat-Away™ thermal greases are ceramic and metal-filled silicone systems which offer exceptional thermal and electrical properties to 550 °F. These materials are used in high-power electronic devices, heat pipes, and other heat exchange systems.

PROPERTIES	THERMALLY CONDUCTIVE GREASES					
Product	637	638	639	640	641	641-EV <sup>①</sup>
Filler	Alumina	Aluminum Nitride	Aluminum	Copper	Silver	Silver
Temperature Limit, °F	-60 to +550	-60 to +550	-60 to +550	-60 to +550	-60 to +550	-60 to +550
Thermal Conductivity, W/m <sup>2</sup> -K	0.475	2.23	3.04	4.68	5.58	5.58
Dielectric Strength, volts/mil	300	300	40*	4*	4	—
Volume Resistivity @ RT, ohm-cm	10 <sup>14</sup>	10 <sup>14</sup>	10 <sup>4</sup>	10 <sup>3</sup>	NA	<0.0008
Chemical Resistance	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Water Absorption	Nil	Nil	Nil	Nil	Nil	Nil
Solids, %	100	100	100	100	100	100
Specific Gravity, gms/cc	2.42	2.27	1.35	1.33	1.40	4.25
Color	White	Gray	Aluminum	Copper	Silver	Silver

Refer to Price List for complete order information.

Aremco Products makes no warranty express or implied concerning the use of this product.

The user assumes all risk of use or handling whether or not in accordance with directions or suggestions, or used singly or in combination with other products.