

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...

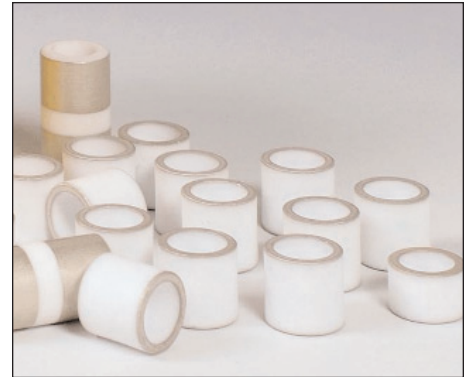
## PRODUCT HIGHLIGHTS

### Conductive Epoxies

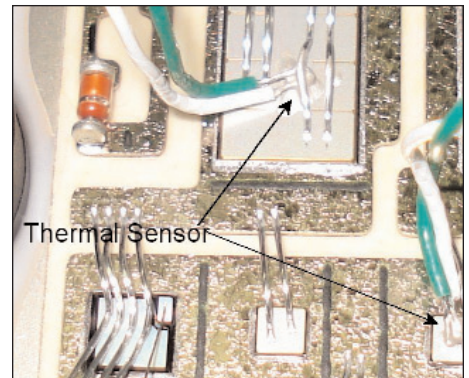
- 525** Silver-Filled, One-Part Paste, 340 °F
- 556** Silver-Filled, Two-Part Paste, 340 °F
- 556-LV** Silver-Filled, Two-Part, Low Viscosity, 340 °F
- 556-HT-SP** Silver-Filled, Screen Printable, Two-Part Paste, 570 °F
- 556-HT-HC** Silver-Filled, Highly Conductive, Two-Part Paste, 480 °F
- 614** Nickel-Filled, Two-Part Paste, 360 °F
- 616** Silver-Filled, Two-Part Paste, 360 °F

### Conductive Inorganics

- 597-A** Silver-Filled, One-Part Adhesive, 1700 °F
- 597-C** Silver-Filled, One-Part Coating, 1700 °F
- 598-A** Nickel-Filled, One-Part Adhesive, 1000 °F
- 598-C** Nickel-Filled, One-Part Coating, 1000 °F



Pyro-Duct™ 597-C metallizes ceramic tubes.



Aremco-Bond™ 556-LV bonds thermal sensor.

PROPERTIES	ELECTRICALLY AND THERMALLY CONDUCTIVE ADHESIVES										
Products	525	556	556-LV	556-HT-HC	556-HT-SP	614	616	597-A	597-C	598-A	598-C
Resin Type	Epoxy							Inorganic High Temp			
Filler	Silver Flake	Silver Flake	Silver Flake	Silver Flake	Silver Flake	Nickel Flake	Silver-Coated Glass Fibers	Silver Flake	Silver Flake	Nickel Flake	Nickel Flake
Particle Size, microns	< 28	< 20	< 20	< 20	< 44	< 20	< 130	< 20	< 20	< 20	< 20
Number Components	1	2	2	2	2	2	2	1	1	1	1
Mix Ratio by Weight, resin:hardener	NA	1:1	100:4	100:2	1:1	1:1	1:1	N/A	N/A	N/A	N/A
Mixed Specific Gravity, g/cc @ 25 °C	1.85	3.2	2.9	3.1	3.1	1.8	1.53	2.3	2.0	2.8	1.5
Mixed Viscosity, cP @ 25 °C	Paste	35,000-40,000	4,000-6,000	40,000-45,000	35,000-45,000	100,000-110,000	50,000-60,000	Paste	400-800	20,000-25,000	400-600
Pot Life, 25 gms @ 25 °C	NA	1 Hr	1 Hr	48 Hrs	> 48 Hrs	3/4 Hr	3/4 Hr	N/A	N/A	N/A	N/A
Recommend Cure, hr/°F	2/300	2/200	2/200	2/200	1/350	2/100	2/100	2/RT + 2/200	1/RT + 0.5/480	2/RT + 2/200	2/RT + 2/200
Alternate Cure, hr/°F	6/250	24/RT	24/RT	1/250	2/300	1/200 or 8/RT	1/200 or 8/RT	---	---	---	---
Service Temperature, °F (°C) <sup>①</sup>											
Continuous	340 (170)	340 (170)	340 (170)	390 (200)	445 (230)	360 (180)	360 (180)	1700 (927)	1700 (927)	1000 (538)	1000 (538)
Intermittent	375 (190)	375 (190)	375 (190)	480 (250)	570 (300)	400 (205)	400 (205)	---	---	---	---
Volume Resistivity, ohm-cm	0.01	0.0009	0.0008	< 0.0001	< 0.0004	0.025	0.005	0.0002	0.0002	0.005	0.005
Tensile Shear Strength, psi <sup>②</sup>	2,500	1,700	1,100	1,700	1,400	2,500	1,000	---	---	---	---
Thermal Conductivity, W/m-°K	1.9	2.2	2.2	2.2	3.5	0.5	0.4	9.1	9.1	2.6	2.6
Hardness, Shore D	76	72	84	90	88	78	78	---	---	---	---
Color	Silver	Silver	Silver	Silver	Silver	Dark Gray	Tan	Silver	Silver	Dark Gray	Dark Gray
Shelf Life, months	6	6	6	6	6	6	6	6	6	6	6

① The low end of the service temperature range for all products is approximately -67°F (-55°C).

② Tested according to ASTM D1002-94 at 25 °C, a method for determining the shear strength of a single lap-joint of metal substrates in tensile loading.

## PRODUCT HIGHLIGHTS

### Thermally Conductive Epoxies

- 568** Aluminum Filled, Two-Part, High Strength, 400 °F  
**805** Aluminum Filled, Two-Part, High Strength, 570 °F  
**860** Aluminum Nitride Filled, Two-Part, 400 °F

PROPERTIES		THERMALLY CONDUCTIVE ADHESIVES		
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	24/100 + 2/200	2/200
Cured Properties	Alternate Cure, hr/°F	24-48/RT	24/RT + 2/200	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	1,800	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

#### Application Notes

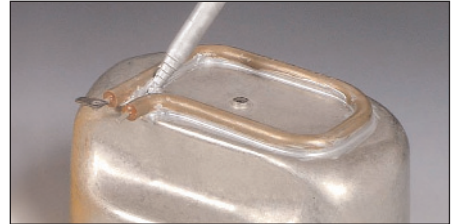
**Surface Preparation:** All surfaces must be free of oil, grease, dirt, corrosives, oxides, paint or other foreign matter. Sand blast or abrade non-porous surfaces, or etch using Aremco's Corr-Prep™ CPR2000.

**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.



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



Aremco-Bond™ 568 bonds copper tube heater to reservoir.

#### 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™ 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



Heat-Away™ 639 coats process heater to improve thermal contact.

#### 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>

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.