



PROTAVIC

Electronic Materials

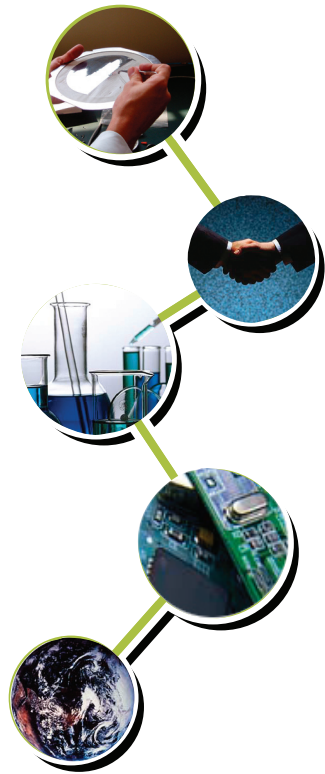
PROTAVIC AMERICA, INC. manufactures a wide range of highly specialized adhesives, encapsulants, paints and inks for use in the electronics and electrical industries. These materials are high purity, high reliability products. PROTAVIC™ is a global company with manufacturing and technical locations world wide. All our products are manufactured with consistent lot-to-lot quality, regardless of your location.

Responsive... Many of our customers require unique formulations vs. off-the-shelf products. Working closely with you, our team of professionals will modify a standard product to satisfy your requirements.

Solutions... Ongoing research and development allows PROTAVIC™ to keep up with our customers ever changing needs. The products are designed for performance and reliability... our technologies will keep you ahead of the competition.

Quality... PROTAVIC™ is synonymous with quality. We strive to control operational costs with the vertical integration of many raw materials. PROTAVIC™ brand products have become globally recognized in the electronics industry for their high quality and proven performance.

Location... Location... Location... PROTAVIC™ is a worldwide organization offering our customers local sales and service.



Product Types	Applications	Capabilities
<ul style="list-style-type: none"> Electrically Conductive Adhesives, Paints, Inks Electrically Insulating Adhesives, Encapsulants, Coatings Thermally Conductive Adhesives, Encapsulants UV Curable Adhesives, Encapsulants, Coatings Sol-Gels 	<ul style="list-style-type: none"> Die Attach Dam & Fill Glob Top Underfill Passive Components Flexible Termination Cathode Coating Conductive Adhesive Ferrite Bonding Optical Bonding RFID / Membrane Switch Photovoltaics 	<ul style="list-style-type: none"> Lead-Free Material Solutions for RoHS Compliance PROTAVIC™ die attached adhesives ensure your package will endure lead-free solder reflow temperatures without popcorning or cracking. PROTAVIC™ low cte underfill and liquid encapsulants offer excellent adhesion and thermal shock resistance while providing ease of use in any manufacturing environment. PROTAVIC™ silicone encapsulants offer high thermal performance with low viscosity and UL 94V-0 recognition. PROTAVIC™ offers a large array of Mixpac™ friendly products.

Key V.I.O

Partial Listing Other Formulations Available

Electrically Conductive Adhesives

Product	Number of Components	Pot Life	Shelf Life	Cure Schedule	Tg, °C	Volume Resistivity ohm-cm	Viscosity mPa	Thermal Conductivity w/m-°K	Die Shear Lap Strength PSI	Comments
ACE 10131	1	48 Hours	1 yr @ -40°C	200°C/15s 175°C/1m	80	<0.003	2,000	3	4300D	Fast curing, high strength
ACE 10021	1	24 Hours	6 mos @ -40°C	200°C/20s 175°C/1m	100	<0.003	600	2.5	2900D	Ultra small dots
ACE 60705	1	8 Hours	6 mos @ -40°C	150°C/1m 100°C/10m	90	<0.003	12,500	2.5	5800D	Low temperature, fast cure
ACE 40010AB	1 or 2	4 Hours	6 mos @ 25°C	80°C/1h 25°C/2d	-20°C	<0.003	16,000	2.5	725L	Room temperature, curing 1:1 ratio

Electrically Insulating Adhesives

Product	Number of Components	Pot Life	Shelf Life	Cure Schedule	Tg, °C	Thermal Expansion ppm/°C	Viscosity mPa	Thermal Conductivity w/m-°K	Die Shear Lap Shear PSI	Comments
ANE 10931	1	72 Hours	6 mos @ -40°C	175°C/1m 135°C/6m	150	25	25,000	1	1450D	Nagra™ underfill
ANE 20904	1	8 Hours	1 yr @ -40°C	150°C/50s 50°C/2h	60	35	25,000	1	1450D	Standard flip chip underfill
ANE 26144-00XX	1 or 2	72 Hours	1 yr @ -40°C	180°C/50s 100°C/1h	137	55	7,000	N/A	3200L	Gapping adhesive for ferrite bonding
ATE 10120	1	30 Days	1 yr @ -20°C	140°C/2m 75°C/1h	80	60	10,000	>1.0	725L	Long use life and low temperature cure
ANE 47927	2	20 Min	1 yr @ 25°C	65°C/15m 25°C/2h	70	55	60,000	N/A	1200L	Stencil adhesive for foil and mesh
ATE 46446	2	4 Hours	1 yr @ 25°C	100°C/1h 25°C/24h	70	N/A	8,000	1.6	4,000L	High strength thermal adhesive for bonded heat sinks*

Electrically Conductive Paints/Inks

Product	Number of Components	Pot Life	Shelf Life	Cure Schedule	Tg, °C	Volume Resistivity ohm-cm	Viscosity mPa	Density	Ash Residue %	Comments
BCE 606642	1	N/A	1 yr @ -20°C	DRY +125°C/1hr 230°C/30m	N/A	<0.001	1,000	1.6	63±3	Paint for Tantalum caps
BCE 30370	1	16 Hours	1 yr @ -40°C	DRY +180°C/30min	105	<0.05	10,000	2.9	69±2	Flexible termination coating
VCO 60130	1	N/A	1 yr @ 25°C	DRY +125°C/1m	N/A	<0.05	6,000	2	N/A	Ink for membrane switch and RFID

Electrically Insulating Encapsulants

Product	Number of Components	Pot Life	Hardness Shore	Cure Schedule	Tg, °C	Volume Resistivity ohm-cm	Viscosity mPa	Thermal Conductivity w/m-°K	Mix Ratio	Comments
PTS 46323	2	8 Hours	60A	125°C/30m 85°C/2h	-64°C	1.4 x 10 ¹⁵	10,000	1.3	1:1	Meets UL™ 94V-0
PNU 46202	2	5 Min	80A	65°C/30s 25°C/24h	-38°C	4.6 x 10 ¹³	8,000	N/A	1:1	Durable non yellowing, non TDI/MDI
PTE 47850	2	90 Min	80D	65°C/2h 25°C/24h	90°C	6.3 x 10 ¹⁴	20,000	1.3	4:1	Very low viscosity
PNE 47207	2	120 Min	75D	65°C/2h 25°C/24h	65°C	6.3 x 10 ¹⁴	20,000	N/A	1:1	Meets UL™ 94V-0

UV Cure Resins

Product	Number of Components	Hardness Shore	Shelf Life	Color	Tg, °C	Shrinkage %	Viscosity mPa	Thermal Expansion ppm/°C	H ₂ O Absorption %	Comments
ANA 97173	1	30A	1 yr @ 25°C	Clear	-23	<2	3,000	90	1.5	Deep cure soft & clear encapsulant
ANA 97290	1	85D	1 yr @ 25°C	Clear	50	0.3	4,000	65	0.5	Low shrinkage adhesive
PNE 90290	1	86D	6 mo @ -40°C	Gray	90	1.8	3,200	50	2.2	Fill material for Dam & Fill
PNE 90590	1	75D	1 yr @ 25°C	Gray	65	1.8	36,500	50	N/A	Dam material for Dam & Fill
PNE 90580	1	80D	3 mo @ 25°C	Gray	65	<0.1	10,000	35	2.2	Glob Top