ThreeBond

PRODUCT SERIES GUIDE

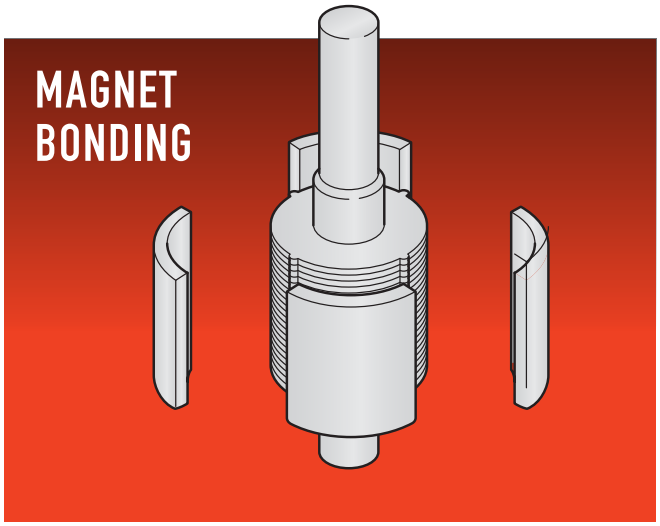
2200 SERIES | INDUSTRIAL EPOXY RESINS

Your global source for superior one-part epoxy resins.

THREEBOND INTERNATIONAL INC. 1.513.779.7300 THREEBOND.COM

POPULAR SPECIALTY FEATURES AVAILABLE

MAGNET BONDING



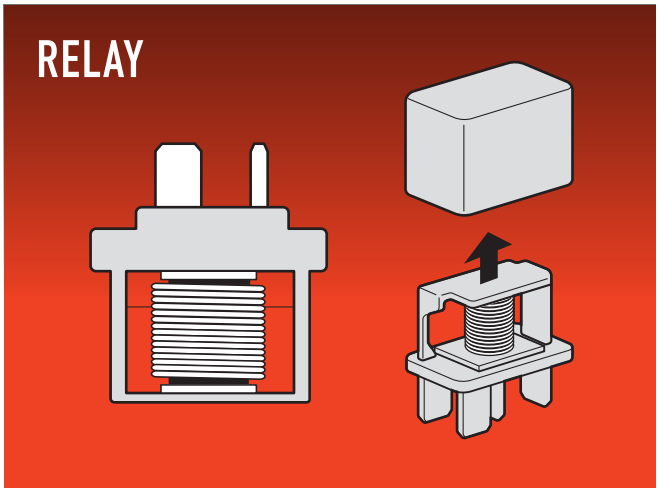
APPLICATION: Bonding

Products: TB2273, TB2273E, TB2285

Characteristics:

- Good Heat Resistance
- Good Chemical Resistance
- Good Electrical Properties
- High Tg

RELAY



APPLICATION: Relay Sealant

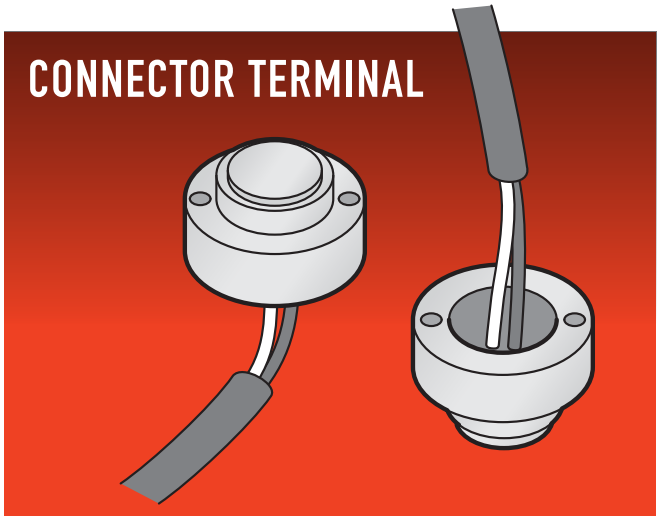
Products: TB2200 Series

Characteristics:

- Solder Reflow Compatible Grade Available
- Good Durability
- Good Adhesion

Curing Method: Heat Curing

CONNECTOR TERMINAL



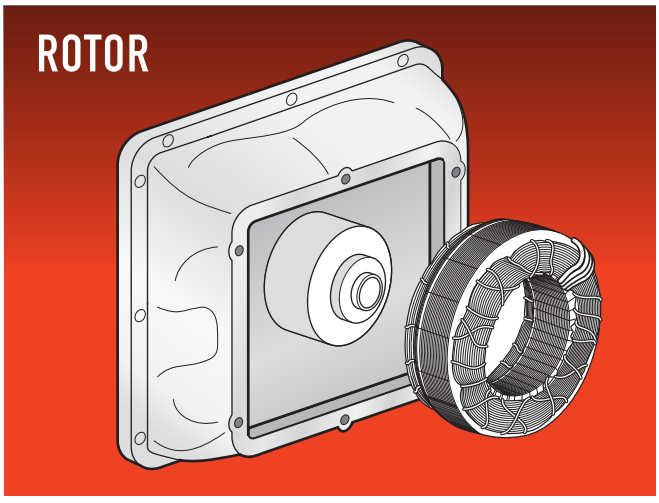
APPLICATION: Sealing

Products: TB2200 Series

Characteristics:

- Good Durability
- Low Temperature Rapid Curable Grade Available
- Good Adhesion

ROTOR



APPLICATION: Magnet Fixing

Products: TB2200 Series

Characteristics:

- High Heat Resistance
- Good Adhesion
- Good Electrical Properties
- Good Durability

Curing Method: Heat Curing

WHY CHOOSE THREEBOND EPOXY RESINS?

WE'VE GOT YOU COVERED INSIDE AND OUT

As a business owner, you understand the importance of choosing the right supplies and materials the first time around. With such a huge selection of industrial epoxy resins, you can easily find solutions that will help to reduce overhead costs, reduce process steps, simplify the overall workflow and eliminate waste. We know that every dollar matters when it comes to working efficiently and we are here to be the partner you need to find the right solutions for every job.

AUTOMOTIVE INDUSTRY

The number of electronics components used in today's car has increased as new technology is introduced to improve efficiency and safety performance. These electronics must meet higher heat resistance, reliability and compatibility for these demanding applications. ThreeBond utilizes our accumulated know-how to develop and produce epoxies that contribute to technological innovation in the automotive industry.

Car Mounted Camera:
Casing, Sealing, Bonding, Screw Fixing, Chip Reinforcement, Substrate Bonding

Head up Displays
Heat dissipation, Lens fixing

ECU
Sealing

Headlight
Sealing

Fuel cell
Relay sealant

Mini-Motor
Bonding

Inverter/Converter
Heat dissipation for control boards, fans, heat sinks, sealing, fixing, chip reinforcement

IDEAL FOR A VARIETY OF INDUSTRIES AND APPLICATIONS

AUTOMOTIVE

Epoxies can be used in a diverse range of vehicle parts to meet the needs of our customers and drive success in the automotive industry. In order to improve the quality and reliability of our products, our sales, R&D and production departments work together as one to propose products that combine both application and purpose.

EV AND FUEL CELL MANUFACTURING

Our one part epoxies seamlessly integrate with eco-friendly EV & Fuel cell manufacturing processes. We continuously develop new products to meet the ever-changing needs of manufacturers.

MOTORSPORTS MANUFACTURING

ThreeBond's epoxies are used to support the production of these vehicles. For over 50 years our products have been used on ATV, Motorcycle and Marine products and have demonstrated excellent performance to suit a range of applications.

SMALL ENGINE MANUFACTURING

We understand how crucial it is for your epoxy adhesives to deliver dependable, lasting performance. Our products are used in many small engine applications from generators to outdoor power equipment. Our products are able to handle the harsh environment for these products so they run for years.

IDEAL FOR A VARIETY OF INDUSTRIES AND APPLICATIONS

CONSUMER APPLICATIONS

These ThreeBond adhesives use epoxy resin as their main component. They are excellent for a myriad of purposes including general purpose adhesion and sealing, and for electronic device bonding, filling, repair, casting and impregnation. Epoxy resins, also known as polyepoxides, are reactive prepolymers and polymers which contain epoxide groups. They often have favorable mechanical properties and high thermal and chemical resistance which make them ideal for a variety of industries and applications.

CONSUMER ELECTRONICS

ThreeBond International is a leading partner supplying products in the ever-changing high-throughput industries, including hard drives, computers, cell phones, medical monitoring devices and much more. And this is in addition to our Automotive Electronics products. Given the digital world in which we live, we have to stay one step ahead of advanced manufacturing trends in anticipation of future needs.

CUSTOM PRODUCT DEVELOPMENT

With over 60 years of expertise, we are well equipped to work with you to create a broad spectrum of custom formulated adhesives or sealants. We visit you on site to better understand your needs, carefully craft formulations, and provide optimized samples for your internal lab testing. We value this collaboration and build lasting relationships through anticipation of market trends and providing smart, innovative solutions to address your challenge.

Contact us at MKTG@threebond.com for more information.

THREEBOND 2200 SERIES (One-component Epoxy Resin)

With a large array of different types of epoxy resins produced globally and available to our customers, our selection allows us to serve our customer's every need. The following lists our products made at our West Chester, Ohio facility (with globally sourced components) to better serve our customers in North America.

Use the table below to help you find the perfect epoxy for your industry and application.

PRODUCT		TB2222S	TB2236	TB2236C	TB2242B	TB2273	TB2273E	TB2285	TB22N101D
MAIN COMPONENT		EPOXY RESIN	EPOXY RESIN	EPOXY RESIN	EPOXY RESIN	EPOXY RESIN	EPOXY RESIN	EPOXY RESIN	EPOXY RESIN
FEATURES		Low temperature cure.	Heat resistance. Excellent flowability. Electric insulation.	Self-leveling metal to metal or ceramic applications.	Excellent electrical insulating properties. High bonding strength. High peel and self-leveling upon application.	Good bonding characteristics and peel strength.	Specially developed for induction cure. Good bond characteristics.	For motor coil impregnation and fixing. Excellent penetrability under heat. High heat resistance. Strength when highly heated.	Excellent heat and chemical resistance. Good bonding strength.
APPEARANCE		Black	Grayish White	Milk White Paste	Milk White Paste	White Paste	White	Milky White	Black Paste
VISCOSITY		30 Pa-s	120 Pa-s	130 Pa-s	41 Pa-s	70 Pa-s	70 Pa-s	120 Pa-s	550 Pa-s
SPECIFIC GRAVITY		1.44	1.35	1.42	1.23	1.15	1.16	1.55	1.66
RECOMMENDED CURING		85°C X 50 min.	120°C X 60 min. 150°C X 30 min.	100°C X 60 min. 120°C X 30 min.	150°C X 30 min.	150°C X 30 min. 120°C X 60 min.	150°C X 30 min.	120°C X 60 min. 150°C X 30 min.	120°C X 40 min. 150°C X 30 min. 180°C X 10 min.
PHYSICAL PROPERTIES AFTER CURING	Hardness	D81	D92	D93	D87	D86	D84	D90	D95
	Glass Transition Temperature	≥70°C	142°C	145°C	103°C	117°C	120°C	163°C	126°C
	Coefficient of Thermal Expansion	-	4.6 x 10 (-5)/C	'5.5 x 10 (-5)/C	8.8 x 10 (-5)/C	8.0 x 10 (-5)	6.7 x 10 (-5)	4.21 x 10 (-5)	-
	Volume Resistivity	6.5 x 10 (12) Ohm*m	2.0x10 (13) Ohm*m	-	5.6X10 (13) Ohm*m	-	6.7X10 (13) Ohm*m	1.23x10 (13) Ohm*m	-
	Dielectric Breakdown Strength	17 kV/mm	20 kV/mm	-	22 kV/mm	-	31 kV/mm	26.4 kV/mm	-
	Tensile Shear Bond Strength	9.8 Mpa	23 Mpa	23.5 Mpa	30.4 Mpa	60 Mpa	40 Mpa	20 Mpa	24 Mpa
	Peel Strength	250 N*m	1180 N*m	1200 N*m	4000 N*m	8000 N*m	-	543 N*m	-
SHELF LIFE		3 Months at 5° C	7 months at 5° C	7 months at 5° C	6 months at 5° C	7 months at 5° C	7 months at 5° C	7 months at 5° C	6 months at 5° C
REMARKS				Used for magnet bonding.					High viscosity which allows for use on vertical or curved surface.