RELTEK

Adhesives and Coatings for Harsh Environments

Who Are We

RELTEK LLC, manufactures and distributes leading edge, cost effective adhesives, sealants and coatings for specialty market applications in the U.S. and internationally. These environmentally responsible, high performance specialty products are recognized in the industry as the premier products for protective coatings and sealants, and bonding difficult-to-bond substrates and dissimilar materials, for surviving in harsh environments.

A leader in niche markets, **RELTEK** offers a competitive advantage in product development, manufacturing and distribution by providing unique solutions at off-the-shelf product cost and delivery. The company's premium performance products, extraordinary customer service and engineering support have made **RELTEK** the primary supplier of high performance technology for companies such as Raytheon, Medtronic and the Port of Seattle. In fact, **RELTEK** with its unique focus on materials for harsh environments has been described by industry market experts and customers as "number one" in the engineered products market.

The RELTEK Market Advantage

RELTEK targets specialty markets that require assemblies made out of difficult-to-bond substrates and dissimilar materials that are able to survive in harsh environments. Our products are most often used where the more common solutions will not or do not work. They are especially suited to harsh environments such as high impact and abrasion forces, stresses from large thermal cycling differentials (-196°C to 200°C), high humidity and continuous submersion in high (caustic-alkaline-basic) and low pH (acidic), harsh chemical or salt water. **RELTEK** products are often used in combinations of each other to meet unique performance requirements.

RELTEK offers a substantial and expanding line of premium performance adhesives, sealants and coatings focused on bonding dissimilar materials, such as thermo plastic urethanes (TPU) to metal, glass or ceramic and difficult-to-bond substrates, such as plastics like high density polyethylene that will survive in harsh environments.

Customers have used **RELTEK** products to upgrade their products and create new products that were previously not possible. Customers have used these products to increase production through put, lower production costs, and increase reliability. Furthermore, **RELTEK's** engineering service has helped many customers develop new applications and markets for their products.

RELTEK products have been on the market since 1996 under the trade name **BONDiT™**. RELTEK products are unique proprietary formulations developed at RELTEK. In addition, RELTEK provides engineering and testing services, electrical cable splice kits, and even, on occasion cable harness assembly for customers. Within the industrial and military contractor industry the **RELTEK** name and trade name have become known as the go-to-guys for solving difficult technical problems reliably. As one program manager of a very large military contractor recently stated, "I know that using your stuff is the only possible way to do it."

Product Summary

RELTEK's product technology is based on epoxy, acrylic, urethane, hot-melt, silicon and silane chemistries. In addition, more than a decade of experience in harsh environmental applications, has provided **RELTEK** with a very high level of expertise in our markets—an expertise in high demand, but short supply.

Adhesives, sealants, potting compounds, paint and protective coatings

One of our primary lines is comprised of thirty products based on epoxy technology, offered as adhesives, sealants, potting compounds, paint and protective coatings, and in some cases as adhesion promoter and primers. Three basic proprietary systems make up the foundation from which multiple products have been derived.

The epoxy line currently includes the BONDiT B-4x series (B-45, B-46, B-481, B-482, B-4682) and the BONDiT B-5x series (B-52, B-521, B-536, B-575), and the new B-7x series. Most of these products are available as coatings, sealants and adhesives in the unfilled versions, thixotropic (TH), caulking compound (CC), electrically conductive (EC), electrostatic dissipative (ESD), and thermally conductive (TC) products. The B-4x series delivers an exceptional balance of adhesion to an almost limitless range of substrates, high resistance to chemicals and moisture, thermal shock, high impact and vibration. They also offer high strength, a broad range of curing and application methods, low HAZMAT (hazardous material) issues for the manufacturing environment, exceptionally clean 100% resin system that is qualified for clean room applications and direct contact with semiconductor materials, and a high probability for acceptance in medical and food applications under FDA rules (for FDA customers must test their system with the RELTEK product incorporated.)

The adhesives are exceptional in their bonding capability, especially for assembly of dissimilar materials with difficult-to-bond substrates which survive harsh environments. Bondable plastics include polyolefin—UHMW, HDPE, and PP, PET (Ertylite & Mylar), PEEK, PPS, PBT (Valox) Acetal (Delrin), ETFE, PVC, PVCF, PVDF (Kynar), ABS, ECTFE (Halar), polyamide and polyimide (Ultem & Torlon), fiberglass and composite. Elastomers include EPDM, butyl, neoprene, SBR (Buna-s), urethanes, and some thermoplastic elastomers (Hytrel). The adhesives will bond these materials to metals, glass, ceramic, cement, wood and cellulose substrates, as well as to each other.

Adhesion promoters

Our line of seven adhesion promoters and primers, the BONDiT A-3, A-43, A-46, A-53, C-6, C-21, C-52, is based on silane technology with proprietary formulations. The products support molding of plastics, rubbers and urethanes to a very large range of substrates. For instance, the BONDiT™ A-3 and A-43 are the only reported one-part ambient cure system that will bond thermo plastic urethanes (TPU) to metal, glass or ceramic. These will stand continuous submersion at the bottom of the ocean or marine exposure for decades. The C-52 is exceptional in its ability to bond polyethylene and polypropylene to metals and other substrates. Other uses include very low viscosity sealants for the micro-pours of porous ceramic, protective coatings on metals and glass. And in some cases to bond together metals, glass and ceramic requiring very thin bond lines or difficult-to-bond plastics, such as high density polyethylene, with very strong thin bond lines. These products can even be used to bond silicone rubber to dissimilar substrates.

Cables, connectors and transducer termination and splicing kits

RELTEK offers a unique line of high performance cable, connector, and transducer termination and splicing kits for use in marine, military, mining, off-shore oil and subterranean applications. The kits are offered in semi-custom and custom design. Essentially, a proven technology is modified to match each customer application and priced accordingly.

Business Strategy

RELTEK's strategy is three fold:
1) To provide engineered solutions with **RELTEK** proprietary off-the-shelf products,
2) To modify existing products to create new products to meet customer requirements,
3) To formulate new product for original equipment manufacturers (OEM) customers.

The company is continually developing new products consistent with customer demand for unique solutions. **RELTEK** enables customers to utilize emerging high-performance engineering materials in novel ways to enhance their competitive edge in their markets. Many of **RELTEK**'s major customers have acknowledged this as the primary reason for their loyalty to **RELTEK**—resulting in 85% repeat business over the long term. Fundamentally, **RELTEK** delivers extraordinary customer service with committed engineering support and follow through as the hallmark of its business strategy.

Typical customers include original equipment manufacturers (OEM), industrial end users, and military contractors and government operations. These customers currently use adhesive, sealants, and coatings for protection of equipment, surfaces, sensors, electronics and electrical terminations; molding operations with plastics, rubber, and urethanes that require adhesion promoters for dissimilar substrates; assemblies of mechanical and electronic components. Most of our customers' consider high performance, reliability, and ongoing engineering support as primary benefits from doing business with us.

Markets

RELTEK 's target markets include electrical and electronics, aerospace, military, industrial end users, chemical manufacturers, plastics, medical, sport, water and waste management, marine and naval, instrumentation and transducers. Our products support markets for electronic assembly and encapsulation, electro-optic cable and transducer systems, automotive, construction/architectural, off-shore oil exploration and production, marine and naval applications, engineering plastics, industrial supply markets.

The company's product strategy focuses on market applications driven by protective coatings and sealants, and assembly of dissimilar materials and difficult-to-bond substrates that can survive in harsh environments such as decade-long submersion in the bottom of the ocean, down-hole oil wells, arctic, water, sewage, waste and recycle, and harsh chemical-corrosive and industrial conditions. **RELTEK** is the only adhesive/sealant/coatings manufacturer that focuses on that strategy.

Our Promise

We promise to solve the insolvable,
With extraordinary customer service,
and
Stick to you forever.

Example Applications

A major military contractor used the RELTEK products to design and build extensive hydrophone array systems which were deployed by the US Navy. RELTEK products have been included in multiple programs of their various divisions.

A leading edge nano-technology company recently filed patent protection of a novel inkjet printing system utilizing their nanocomposite inks and coatings. This extraordinary breakthrough technology in ceramic tile decoration provides a low temperature curing process that allows virtually unlimited art work on the decorative tiles used for architectural flooring, walls, kitchens, baths and pools. One of the keys to success of this process is the RELTEK adhesion promoters which enable the new coatings to withstand harsh environments both exterior and interior applications.

A leader in the design, manufacture and deployment of pigging equipment, worked with RELTEK, under contract to develop an electrical cable assembly that will withstand the harsh chemical environments common to pigging pipe lines, particularly crude oil and gas pipe lines. The RELTEK products and technology are designed into their system as sole source materials, and RELTEK is manufacturing the cables in a turn-key operation. The BONDiT B-4X series products are also designed into other parts of its product line to encapsulate electronics.

A major manufacturer of medical products recently incorporated the A-43 adhesion promoter into a new disposable medical device used for cardiac surgery. The A-43 product provides a cohesive bond of thermo-plastic urethane to stainless steel components; the customer was unable to find a comparative product capable of meeting their specifications.

An industrial manufacturing company uses the B-536TH to bond and seal small PVC tubing to an acetal (Delrin) fixture. This device is incorporated into helmets for aviation pilots. A competing product was previously in use with inferior performance. Not only did RELTEK improve performance, incorporation of B-536 adhesive allowed the company to change its line production model to a cell production model realizing significant production cost savings.

The Port of Seattle sought a way to gain docking business for naval aircraft carriers and corporate cruise ships. The design of the prow of such ships is so radical that it impacted buildings on the dock before engaging the dock's bumper system. To solve the problem without building a new docking system the Port attached large sheets of UHMW polyethylene to the sides of steel barges…using the BONDiT B-45TH adhesive as the sole method of attachment. The UHMW-lined barges became the new bumper system to doc the ships. Environmentally the B-45TH must withstand continuous exposure to the marine salt water, summer sun to winter freezing, and impacts of aircraft carriers. The project was so successful it was repeated the following year. No other product exists that can do the job so easily.

One of the largest manufacturer's of seismic cables utilizes the A-3 adhesion promoter to bond polyurethane overmolding to treated aluminum substrate and electronic components in sealing hydrophones. The RELTEK is the only system they found that could provide a reliable water tight seal while surviving the constant exposure to the harsh environment of on-deck ship exposure in the Antarctic ocean to the hot sun of the equator with thermo-shock from deployment into cold oceans from the hot ship deck and long exposure to full submersion in seawater for extended periods. Tens of thousands of hydrophones are produced with each cable.