APPLIED POLERAMIC INC

FORMULATION FOR ADVANCING COMPOSITES

MISSION: TO PROVIDE INNOVATIVE MATRIX MATERIALS THROUGH THE USE OF ADVANCED TECHNOLOGIES THAT RESULT IN OPTIMIZED COMPOSITE PERFORMANCE AND MANUFACTURING

VISION

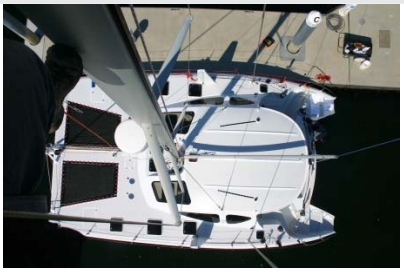
Applied Poleramic, Inc. (API) is dedicated to providing innovative solutions to further enhance the utilization of fiber reinforced composites. This is accomplished by offering unique and custom matrices specifically tailored to individual composite applications and synergistic product technologies.

VALUES

In response to industry needs, Applied Poleramic, Inc. continues to develop new technologies to advance composite performance and manufacturing. Through this investment and working in close collaboration with our customers we are able to develop materials that exceed expectations. By providing our customers with exactly what they want as opposed to force fitting a product to an application, API has maintained excellent customer loyalty. Good customer experiences and superior technology are what promote our products and services.

SOME OF API'S INNOVATIVE PRODUCTS INCLUDE:

» Toughened Multiphase Ambient Temp. Cure Epoxy Matrices
» Clear "Water White" Epoxy Matrices
» High Modulus Resin Matrices
» Thermoformable Hybrid Resin Matrices
» Thermo-oxidative Stable Matrix Resins
» Matrices for Cryogenic Applications
» Micro-crack Resistant Resin Matrices
» Matrices for Radiation Shielding
» Thermally and Electrically Conductive Resin Matrices
» Ablative Matrix Materials
» Matrices for Ballistic/Armor Applications
» Matrices for FST Applications
» Structural Composite Repair Resins
» Ambient Temperature Processable Foams
» Fire Resistant Epoxy Foams
» Architectural Coating Resins
» Coatings for Cathodic Disbondment Resistance
» Thick Section Casting Resins
» Extremely Fast Cure Adhesives
» Toughened Tackifiers and Binders for Fibers/Fabrics




TECHNOLOGY

Applied Poleramic, Inc. develops and manufactures resin formulations for composites based on epoxies, benzoxazines, bismaleimides, polyimides, cyanate esters, and ceramic precursors. Resin systems are offered for all composite manufacturing processes including infusion (VARTM, RTM, RFI), filament winding, pultrusion, laminating, and prepreg. A range of curing technologies is offered including thermal, UV, and E-beam.

A majority of the products are based on epoxy technology and hybrids of epoxy resins with other chemistries to achieve the necessary balance of processing and properties (e.g. strength vs. toughness). Innovative technologies have been developed at API to enable the development of the highest performance matrix resins from a range of proprietary toughening modifiers to a series of molecular fortifiers. Composite performance is enhanced through these matrices due to unique molecular and network design and morphology control (single phase, multiphase, IPN, etc.). Many API products have become industry standards and have been extensively studied (over 100 publications) and referenced in the literature.

HISTORY

Applied Poleramic, Inc. was started in 1992 in response to a global demand for resin matrices for fiber reinforced composite materials. The conception of API was a result of the complex structure of large integrated composites corporations, which constrained custom and specialty product development. This coupled with extensive development time often exceeded the project time line. Accordingly, Applied Poleramic, Inc. was started as a result of these operational inefficiencies with a specific focus on the matrix component of fiber reinforced composite materials. As in the first days of Applied Poleramic, Inc., we continue to be at the forefront of new technology and set the pace in industry for development of new resin matrices. Educating our customers about matrix chemistry, morphology, and composite properties has been a priority since the inception of API. Rich Moulton, the founder of Applied Poleramic, Inc., has developed more composite materials that are flying than anyone else in the world. While Rich continues as one of the directors of Applied Poleramic, Inc., the company is now headed by Dr. Brian S. Hayes, President & CEO, and Mr. Doyle G. Dixon, Vice President.

LEADERSHIP

Dr. Brian S. Hayes

President and CEO

Dr. Hayes became a director and President & CEO of Applied Poleramic, Inc. in November of 2012. Prior to this he was the Technical Director. Before working in industry, Dr. Hayes was an Assistant Professor (currently an Affiliate Professor) at the University of Washington in the Department of Chemical Engineering. Dr. Hayes has consulted for over 20 companies in the polymers and composites industry. He has taught over 30 workshops on topics such as matrix formulation, composite toughness modification, and processing, and has delivered an extensive number of technical presentations. Dr. Hayes has over 100 publications and one book; Hayes, B.S. and Gammon, L.M., "Optical Microscopy of Fiber-Reinforced Composites", ASM International, Materials Park, Ohio 2010. His technical areas of expertise include matrix formulation, formulation of adhesive systems, toughness modifier development, nano-material functionalization and dispersion, polymer synthesis, mechanical testing and analysis, and processing of composite materials. Dr. Hayes has extensive knowledge of thermosetting chemistries and ceramic precursor materials. He has developed numerous commercial prepreg matrix systems and infusion resins used in applications ranging from aerospace to sporting goods.

Mr. Doyle G. Dixon

Vice President

Mr Dixon has been a director and Vice President of Applied Poleramic, Inc. since 1992. Prior to joining Applied Poleramic, Inc. Mr. Dixon was employed by Hexcel as a Research Engineer in the composites area. He managed a carbon fiber evaluation project with which to examine fiber/matrix interfaces to predict composite properties. Mr. Dixon has designed and built composite processing equipment for many companies and numerous government agencies. He has developed specialized processing equipment including a proprietary process for thermoplastic and rubber honeycomb, designed and built prepreg machines for 5 companies, resin filming machines, automated tape placement heads, e-beam processing equipment, and more. Mr. Dixon also has also developed numerous commercial resin formulations for infusion, filament winding, and pultrusion along with epoxy foams and specialty coatings.

Mr. Richard Moulton

Mr. Moulton is a director, and past President & CEO and founder of Applied Poleramic, Inc. He has over 45 years of formulating experience and has in-depth knowledge of many different matrix chemistries including epoxies, cyanate esters, benzoxazines, bismaleimides, polyimides, and ceramics. Prior to starting Applied Poleramic, Inc. in 1991 he was a consultant for over 10 years for clients including Hexcel, SEP, and NASA. He was previously employed by Hexcel and was the Research and Development Director for composite materials. He has developed more materials and products that are on production aircraft than anyone else has in the world. As examples, he has developed products that meet Boeing Material Specification (BMS) 8-256, 8-79, 8-168, 8-178 and 8-129. BMS 8-256 is the first controlled flow matrix prepreg system and BMS 8-79 is the first skin-core self-adhesive prepreg system used on Boeing aircraft.