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FOR IMMEDIATE RELEASE

NEI Corporation announces new silicone-based coating that improves peel and tear strength of coated fabrics

Nanotechnology-enabled coating developed under a NASA SBIR program has been demonstrated in a prototype airbag

SOMERSET, NJ - NEI Corporation, a proven provider of nanoscale materials, announced the demonstration of a novel silicone-based coating in prototype airbags. Commercially available coating formulations were modified with the addition of highly dispersed, functionalized nanoscale additives. Upon application and curing of the coating with the use of conventional processing techniques, these nanoscale additives form the necessary chemical bonds to become an integral part of the silicone network. Subsequent material characterization demonstrated improvements in mechanical, thermal and barrier properties, which enable high performance coated fabrics to be engineered with reduced areal density, thereby allowing for significant reductions in system mass and volume. The relevant mechanical properties of commercial silicone coatings, as well as those of the resulting coated fabrics, were substantially improved with the addition of small amounts of engineered nanostructured additives. Successful pilot scale-up was achieved, culminating in the fabrication of prototype airbags which exhibited enhanced gas retention. The NASA sponsored program was carried out in collaboration with ILC Dover, a leader in design and manufacturing of engineered softgoods - products that are flexible by nature.

High performance coated fabrics of various types have already been used by NASA in a number of applications, including space suits and impact-attenuating airbag systems. The demand for such materials is expected to grow as research and development continues in the areas of inflatable habitats, sunshields, aerodynamic decelerators, and other deployable space structures (e.g., antennas, trusses, solar arrays). Commercial applications for silicone-based nanocomposite coatings are numerous and varied. Inflatables, such as those used in safety restraint systems, can benefit from improvements in mechanical, thermal and barrier properties. Other applications which employ coated fabrics such as hot air balloons, cold air inflatables, boat sails, paragliders and parachutes also stand to benefit from the potential for greater durability with reduced weight and gas permeability.

The program began with the development of novel additives intended to alter the mechanical and physical properties of conventional two-part silicones, followed by a demonstration of the benefits when applied to different fabrics, such as woven fiberglass and VECTRAN®. The nanoadditive synthesis was then scaled up to prepare large batches of coating formulation which enabled production of coated fabrics at pilot scale. Test articles were manufactured in the form of 18" spherical prototype airbags. Leakage testing conducted at ILC Dover concluded that the nanocomposite-coated test articles exhibited a gas retention capability superior to that of the control airbags.

"The success of this project can be traced to our core competency in synthesizing and functionalizing nanoscale materials targeted at specific applications", said Mr. Kenneth Eberts, Senior Product Development Engineer at NEI.

NEI welcomes the opportunity to partner with end-users of silicone coatings to tailor the properties to the specific application needs. NEI will create a custom solution that meets the requirements, and will work with the customer from initial R&D all the way through large scale manufacturing.

About NEI Corporation

NEI Corporation develops, manufactures, and distributes nanoscale materials for a broad range of industrial and government customers around the world. The company's products incorporate proprietary nanotechnology and advanced materials science to create significant performance improvements in high-volume manufactured goods. NEI's products include advanced protective coatings, ultra-high performance battery electrode materials, nanomaterials for emerging markets, including high performance heat transfer fluids. NEI has created a strong foundation in the emerging field of Nanotechnology that has led the company to become a leader in selected markets. Established in 1997, the company is based in Somerset, NJ. For more information, contact NEI Corporation at (732) 868-3141 or www.neicorporation.com