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NDSU RESEARCH FOUNDATION LICENSES COATINGS TECHNOLOGY TO ELINOR SPECIALTY COATINGS

Goodbye, Chromium. Novel Coatings Technology Introduced for Aluminum Marine and Automotive Use

Jan. 29, 2014, Fargo, N.D. — The North Dakota State University Research Foundation ([NDSU/RF](#)) announced today that it has concluded a license agreement with [Elinor](#) Specialty Coatings, Fargo, N.D., for a breakthrough hexavalent chromium-free coatings technology. The patented coatings technology protects aluminum alloys, such as those found in vehicle and ship parts, or in vehicles made entirely from aluminum.

The licensing agreement gives Elinor Specialty Coatings exclusive rights in marine and automotive markets to further develop and commercialize the patented coatings technology developed at North Dakota State University, Fargo.

The magnesium-rich technology will be used in primers marketed to both the military and civilian auto and shipbuilding industries under the trade names Aluma45-MTM and Aluma45-ATM. According to Elinor Specialty Coatings, the coatings will provide viable alternatives in manufacturing and maintenance, without the toxicity of hexavalent chromium Cr(VI). The products are designed to be applied over chromium-free pre-treatments or bare metal, eliminating Cr(VI) entirely from the coating system.

Whether on vehicles or vessels, corrosion is a culprit costing companies substantial dollars. The toxic substance, hexavalent chromium Cr(VI) prevents corrosion, but can also contaminate the environment and contribute to cancer. People more commonly may be familiar with hexavalent chromium as featured prominently in the movie *Erin Brockovich*.

Elinor Specialty Coatings is the first and only company offering Mg-rich Aluma45-MTM and Aluma45-ATM in the marine and automotive markets. “The long-lasting protection allows longer periods between maintenance cycles, while eliminating the toxic work conditions and long-term hazmat storage dilemmas of Cr(VI) for companies or command units,” said Dante Battocchi, chief technical officer of Elinor Specialty Coatings.

Battocchi said previous chromate-free primers on the market did not provide the anti-corrosive properties of chromate, which despite its known toxicity, has not been banned in the U.S. because it is highly effective at inhibiting corrosion of high strength aluminum. The magnesium technology formulated for Aluma45-MTM and Aluma45-ATM at NDSU and now licensed by Elinor Specialty Coatings for marine and automotive use, provides the first non-chrome corrosion inhibiting system to perform as well as, or better than chromate in laboratory and field testing, according to Battocchi.

Potential benefits of the new technology include: reduced costs by eliminating the need for mandatory extra control measures designed to reduce exposure to chromate; and potential lower density than chromate primers, thus reducing weight and resulting in lower fuel consumption. According to Battocchi, many manufacturers currently rely on toxic coatings designed for steel, which aren't nearly as effective on aluminum as the Aluma45TM primers.

“We are thrilled to see another more environmentally-friendly coating technology reach the market through Elinor Specialty Coatings,” said Dale Zetocha, executive director of the NDSU Research Foundation, which licenses technologies developed at North Dakota State University. “It represents a great opportunity to commercialize this coating technology research for these applications through a North Dakota company.”

North Dakota State University researchers playing a role in years of development of the patented Cr-free Mg-rich technology used in Aluma45-MTM and Aluma45-ATM include Dr. Gordon Bierwagen in the Department of Coatings and Polymeric Materials at NDSU, Dr. Dante Battocchi, and Dr. Michael E. Nanna. Previous research funding that resulted in the development of these coatings was provided by the U.S. Air Force Office of Scientific Research; the Center for Surface Protection, a state Economic Development Center of Excellence at North Dakota State University; and the Product Design Center at NDSU.

About Elinor Specialty Coatings

[Elinor](#) Specialty Coatings solves problems in coatings-related markets through innovative technology transfer and in-house scientific research and development. The company also offers manufacturing supply chain solutions with MagnaShield™ for magnesium components. Elinor is working with manufacturers in the industries of transportation (automotive, shipbuilding) to provide hexavalent chromium-free Mg-rich primers available with Aluma45-M™ and Aluma45-A™. In addition, Elinor is addressing a challenge in maintenance and preservation of historical works of art and decorative metal architecture around the world through a technology from North Dakota State University known as BronzeShield.™ www.elinorcorp.com

About the NDSU Research Foundation

The NDSU [Research Foundation](#) is an independent, not-for-profit organization that supports NDSU in its teaching, research and public service missions. The Foundation manages the intellectual properties developed by faculty, staff and students doing research at NDSU and facilitates commercialization of these technologies. By commercializing intellectual property through licensing of technology, the Foundation is able to create resources that are returned to the individual inventors and to the University to promote continued research. www.ndsuresearchfoundation.org

About NDSU

[NDSU](#), Fargo, North Dakota, USA, is notably listed among the top 108 U.S. public and private universities in the Carnegie Commission on Higher Education's category of "Research Universities/Very High Research Activity." As a student-focused, land grant, research institution, NDSU is listed in the Top 100 research universities in the U.S. for R&D in chemistry, psychology, physical sciences, social sciences and agricultural sciences, based on research expenditures reported to the National Science Foundation. www.ndsu.edu/research