

March 2, 2016

## **Ashland launches Soteras™ MSi anode binder for higher-capacity electric vehicle Lithium-ion batteries**

*Breakthrough technology used with silicon enables capacity increases by as much as 30 percent*

TOKYO, Japan – The energy storage market is constantly looking to increase capacity for applications such as electric vehicles. Ashland addresses this need with its new Soteras™ MSi binder. The new anode binder is based on breakthrough technology specifically for use with silicon to increase the capacity of lithium-ion batteries by as much as 30 percent. This step-change in battery capacity could prove significant for cell developers supplying the electric vehicle market. The product will be showcased at Ashland's booth W25-14 at Battery Japan, Tokyo Big Sight to be held March 2-4.

Soteras™ MSi binder is a unique water-based binder that can easily be processed using standard industry practices. Soteras™ MSi binder controls swelling, resulting in superior cycle performance at capacities greater than 400 mAh/g when used with silicon oxide (SiO), silicon composite (SiC), silicon oxide composite (SiOC), or silicon graphene (Si-Gr) technologies.

"As the adoption of lithium-ion batteries moves from consumer electronics to electric vehicles and mass storage, there is an increasing demand for higher capacities," said Dr. Robert Gibbison, marketing director, Industrial Specialties, Ashland. "The range of Soteras™ binders, including Soteras™ MSi binder, can help cell developers achieve these goals without substantially altering their standard manufacturing processes."

Ed Connors, group vice president, Industrial Specialties, Ashland, sees the great potential of lithium-ion battery technology and commented, "We are confident that our novel Soteras™ MSi anode binder will provide differential performance in the rapidly evolving energy storage market. With a global footprint, Ashland is committed to further advancing this state-of-the-art technology and working closely with cell developers to bring leading products to the market."

Ashland will also showcase other products for lithium-ion batteries at Battery Japan, including Bondwell™ CMC (carboxymethyl cellulose) for anode electrodes, PVP (polyvinylpyrrolidone) for coated separators, and Micropure™ NMP (N-methyl-2-pyrrolidone) for processing cathode electrodes. Please visit us

at stand W25 – 14 or contact Kenji Hanada at [khanada@ashland.com](mailto:khanada@ashland.com) for more information.

### **About Ashland**

Ashland Inc. (NYSE: ASH) is a global leader in providing specialty chemical solutions to customers in a wide range of consumer and industrial markets, including architectural coatings, automotive, construction, energy, food and beverage, personal care and pharmaceutical. Through our three business units – Ashland Specialty Ingredients, Ashland Performance Materials and Valvoline – we use good chemistry to make great things happen for customers in more than 100 countries. Visit [ashland.com](http://ashland.com) to learn more.

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