News Release

Ashland helps drive safer solutions for a longer life
Company reduces range anxiety with Soteras™ binders for silicon-based anodes and ceramic coated separators

WILMINGTON, Delaware – August 15, 2017 – Ashland thrives on putting science and chemistry to work to develop solutions to complex problems, pushing the boundaries of what's possible, and advancing the competitiveness of customers across diverse industries.

The growing market for electric and hybrid vehicles creates increased demand for safer and longer-lasting batteries to expand the driving range, adding to the allure of the electric and hybrid vehicle market for consumers. Leveraging Ashland's broad expertise in specialty ingredients, with a focus on water-soluble polymers, Ashland's Soteras™ binders enable greater battery integrity with up to 30 percent longer cycle life. The company will showcase its line of binders at the Battery Show, September 12–14, in Novi, Michigan, booth 1754.

Soteras™ MSi is a unique binder for high-capacity silicon-based anodes in lithium ion batteries. Able to be processed using standard industry practices, its ability to control swelling results in superior cycle performance yielding up to 30 percent longer battery cycle life.

Flexible and strong, Soteras MSi binder also offers good electrochemical stability. The binder also has good slurry properties, which facilitate smooth coated surfaces on the current collector and help reduce battery failure.

A primary purpose of the ceramic-coated separator in lithium ion batteries is to increase temperature tolerance and to provide mechanical stability. Heat shrinkage of the separator film can profoundly affect the lifespan and safety of lithium ion batteries and coating of the separator can provide a safety benefit to the lithium ion batteries by adding a heat-resistant layer.

Soteras™ CCS is a unique binder for lithium ion batteries that allows effective ceramic coating on polyolefin separators to reduce film shrinkage during thermal stress. Providing increased usability, it is a two-component system compatible with typical coating processes and delivers good lithium ion permeability and minimizes negative effects on cell electrochemistry.

Soteras™ CCS binder has been formulated to work effectively on both polyethylene (PE) and polypropylene (PP) separator substrates.

The unique, two-component Soteras CCS binder system, based on Ashland's core cellulosic chemistry, employs cross-linking to enable the ceramic-coated separator to meet industry heat shrinkage standards. Additionally, Soteras CCS binder is compatible with standard industry coating techniques so it is easy to incorporate without significant downtime or costly capital investments. Soteras CCS binder-based ceramic formulations provide good wettability and uniform coatings.

"Ultimately, Ashland has helped increase battery capacity and driving range while also contributing to making batteries safer for their intended use," said Dr. Robert Gibbison, global segment leader, Performance Specialties, Ashland. "Our solutions for ceramic coated separators and silicon-based anodes amplify the efficacy, refine the usability, add to the allure, ensure the integrity, and improve the profitability of our customers' products and applications."

About Ashland
Ashland Global Holdings Inc. (NYSE: ASH) is a premier global specialty chemicals company serving customers in a wide range of consumer and industrial markets, including adhesives, architectural coatings, automotive, construction, energy, food and beverage, personal care and pharmaceutical. At Ashland, we are nearly 7,000 passionate, tenacious solvers – from renowned scientists and research chemists to talented engineers and plant operators – who thrive on developing practical, innovative and elegant solutions to complex problems for customers in more than 100 countries. Visit ashland.com to learn more.

FOR FURTHER INFORMATION

Media Relations
Carolmarie Brown
302-258-5549
ccbrown@ashland.com