

News Release

Ashland opens world-class pharmaceutical excipient production facility in Nanjing, China

Ashland now manufactures its major brands of excipients in Nanjing to better serve China's burgeoning pharmaceutical industry.

NANJING, CHINA, October 25, 2016 – Commemorating the opening of a new pharmaceutical excipient facility, senior leaders at Ashland (NYSE: ASH) cut the ribbon at the start of a new production line in Nanjing, China, fulfilling a pledge today to produce its world-class excipients in Asia.

Demand for polymer excipients, the substances formulated alongside the active ingredients of medications, is rising in China as the country's pharmaceutical industry moves to modernize oral drug manufacturing and comply with new quality standards set forth in the 2015 edition of the Chinese Pharmacopoeia.

Ashland is one of the world's leading producers of high-quality, problem-solving polymer excipients sold into pharmaceutical markets around the world.

"Ashland teams around the world are comprised of 5,000 passionate, tenacious solvers who thrive on developing practical, innovative and elegant solutions to complex problems in applied chemistry, always pushing the boundaries of what's possible and advancing the competitiveness of customers across diverse industries," said William A. Wulfsohn, Ashland's Chairman and Chief Executive Officer. "Opening a world-class excipient facility in Nanjing is a testament to our willingness to partner with industry in China and to support the integrity and usability of pharmaceuticals produced in a country that is rapidly modernizing its healthcare infrastructure."

William Zhao, General Manager of Specialty Ingredients, Greater China echoed Wulfsohn's comments. "Opening a facility in Nanjing to manufacture the world's most respected brands of polymer excipients within 'tight' world-class specifications is a vote of Ashland's long-term confidence in the Chinese pharmaceutical industry," he said. "Making a commitment to the Chinese market with a state-of-the-art facility, Ashland may now supply highly functional excipient technologies to manufacturers of oral pharmaceuticals and provide tailor-made formulation solutions that enable the delivery of vital health care to everyone in China."

Among the cellulose-based excipients, Ashland will make available to China's markets include those sold under the Klucel™ HPC, Benecel™ HPMC, Blanose™ CMC and Aqualon™ EMC trade names. The company also will make available a series of PVP-based polymer excipients, including Plasdone™ PVP and Polyplasdone™ PVPP

polymers. All of these products are sold with a Registered Pharmaceutical Excipient Certificate, as required by the China Food & Drug Administration.

A world-class quality control laboratory for world-class manufacturing of polymer excipients

Alongside Ashland's first ever pharmaceutical excipient production facility in China is an advanced quality control laboratory that contains equipment to measure and analyse products throughout the production process, including Thermal Fourier transform infrared spectrometers, Agilent liquid chromatography systems, and PE ICP optical emission spectrometers. The quality control system design and advanced analytical equipment allow Ashland to test all excipient products in accordance with Chinese Pharmacopoeia quality standards.

"Ashland has designed the excipient production facility in Nanjing to meet Pharmaceutical Excipient GMP standards, and that high level of manufacturing integrity is evident in outstanding product quality testing results," said Zhao. "Moreover, our machines for each processing stage, including screening, grinding and packaging, are all global leading brands, and further support the manufacture of products that meet the same high standards as our world-class facilities outside of China."

A pharmaceutical technical center in Shanghai

Experts in the structure-function relationships of excipients and their impact on the enduse functionality of oral pharmaceutical dosage forms, Ashland is able to support formulators of pharmaceuticals with formulation studies that solve complex formulation problems.

"Ashland's goal is to help amplify the efficacy and refine the usability of customers' products with functional excipients proven to solve common formulation problems. Toward that end, we recently expanded the Ashland technical center in Shanghai to support current and prospective customers in China with best-in-class services that may be required to ensure the best-in-class manufacture of robust tablets containing an Ashland excipient," said Zhao.

"Working through our pharmaceutical technical center in Shanghai, these customers will gain access to state-of-the-art capabilities for bioavailability and solubilisation enhancement and the latest coating and tablet formulation technologies." added Zhao.

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 more than 5,000 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.

Ashland also maintains a controlling interest in Valvoline Inc. (NYSE: VVV), a premium consumer-branded lubricant supplier. Visit <u>ashland.com</u> to learn more.

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