



Renewable chemicals naturally designed and engineered to deliver the performance that adds value to everyday products

## Green Biologics and Acme Hardesty Launch Bio-Based Esters for Personal Care Markets

*Full Range of 100 percent Bio-based Esters Introduced at In-Cosmetics Show in NYC*

Ashland, Virginia and Abingdon, Oxfordshire U.K. (September 7, 2016) – [Green Biologics, Inc.](#), the U.S. subsidiary of Green Biologics Ltd., a U.K. industrial biotechnology and renewable chemicals company, and [Acme Hardesty](#), a division of Jacob Stern & Sons, Inc. and a leading U.S. supplier of bio-based chemicals, announced at the In-Cosmetics Show in New York City a joint development agreement focused on addressing the sustainability needs within personal care markets by offering 100 percent bio-based esters to Acme Hardesty's customers.

Together, the companies plan to produce a full range of butyl and isopropyl esters using products manufactured at Green Biologics' new renewable chemicals production plant in Little Falls, Minnesota. As part of the agreement, Green Biologics will provide 100 percent bio-based n-butanol and 100 percent bio-based isopropyl alcohol, produced from their renewable acetone, for esterification. Acme Hardesty will source necessary acids and oils to produce the targeted esters, including isopropyl myristate, isopropyl palmitate, butyl myristate, butyl palmitate, butyl stearate, butyl oleate, and dibutyl sebacate, with the potential to produce other high value esters in the future.

Acme Hardesty will be responsible for product marketing, supported by Green Biologics' green chemistry laboratory in Ashland, Virginia. Green Biologics and Acme Hardesty will also jointly market 100 percent bio-based esters into other industrial sectors, including lubricants, plastics, and specialty solvent markets.

"We're delighted to move forward with our collaboration with Acme Hardesty," said Timothy G. Staub, Global Vice President of Business Development for Green Biologics. "Their rich history in sustainable chemistry makes Acme Hardesty the industry leader in distributing and marketing bio-based solutions to personal care and industrial markets, and we're pleased to strengthen our relationship with an outstanding partner."

Green Biologics' is in the early start-up stages of its first commercial production facility for renewable n-butanol and acetone in Little Falls, Minnesota, with the aim of beginning shipments to customers by Q4 of this year. Green Biologics is a member of the American Chemistry Council (ACC) and is committed to Responsible Care®. All products produced by Green Biologics are USDA BioPreferred® and 100 percent renewable.

"We're excited to extend our growing bio-based product line with Green Biologics," said Graeme Biggin, Business Development Director for Acme Hardesty. "This is a fantastic expansion of the bio-based solutions that we offer, which include Green Biologics' existing renewable n-butanol and acetone," he adds. "We had an enthusiastic response at our booth at the In-Cosmetics Show in New York on September 7 - 8."

Interested parties are encouraged to contact Acme Hardesty online at [www.acme-hardesty.com](http://www.acme-hardesty.com) or toll-free at (800)–223-7054.

For more information on Green Biologics, please visit [www.greenbiologics.com](http://www.greenbiologics.com).

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### About Green Biologics

Green Biologics Ltd (GBL) is a renewable chemicals company based in Abingdon, England with a wholly owned U.S. operating company, Green Biologics Inc., based in Ashland, Virginia. GBL's *Clostridium* fermentation

platform converts a wide range of sustainable feedstocks into high performance green chemicals such as n-butanol, acetone, and through chemical synthesis, derivatives of butanol and acetone used by a growing global consumer and industrial products customer base. The platform combines advanced high productivity fermentation with superior-performing proprietary *Clostridium* microbial biocatalysts and synthetic chemistry to produce a pipeline of high value green chemicals with optimal performance in downstream formulations.

Green Biologics was named to the Global Cleantech 100 list of the top Cleantech companies in the world for 2014 and 2015. The company was also #8 on the Hottest 40 Small Companies in the Bioeconomy and #22 on the Hottest 30 list for Bio-based Chemicals and Materials for 2015.

Green Biologics is transforming the global specialty chemicals market, providing its customers with products and technology that are more sustainable and higher value than petroleum-based alternatives. For more information, visit [www.greenbiologics.com](http://www.greenbiologics.com).

### About Acme-Hardesty

Since 1942 AcmeHardesty has been a leader in the oleochemical industry. A division of Jacob Stern & Sons, Inc., AcmeHardesty has a global reach and is one of the largest distributors of castor oils and derivatives, palm derivatives, preservative, and surfactants.

Established as a manufacturer of tallow-based glycerine, AcmeHardesty transitioned to distributing a full range of renewable palm-based glycerine, fatty acids, and fatty alcohols. A member of the Roundtable of Sustainable Palm Oil, Acme is committed to the principles of sustainability.

Today, the company is further expanding its core oleochemical product line to focus on serving the industry's interest in renewable, bio-based chemical solutions. AcmeHardesty is a leader in providing innovative science and services from a diverse and sustainable feedstock and is dedicated to the expansion of the bio-based chemical industry with innovative products and solutions. For more information, visit <http://www.acme-hardesty.com/>.

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