



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

Green Biologics' Renewable Chemicals Granted Kosher and Halal Certification

Company's n-butanol and acetone can now serve as ingredients for the growing markets for kosher and halal consumer goods

Ashland, Virginia and Abingdon, Oxfordshire U.K. (September 18, 2017) – [Green Biologics, Inc.](#), the U.S. subsidiary of Green Biologics Ltd., a U.K. industrial biotechnology and renewable chemicals company, announced today that it has achieved kosher and halal certification for the 100 percent bio-based n-butanol and acetone, produced at the company's commercial facility in Little Falls, Minnesota. These certifications enable Green Biologics' chemicals to serve as ingredients for personal, homecare and food products.

"The kosher and halal certifications that have been granted to our Little Falls, MN manufacturing facility will further enable us to build partnerships within the major food, cleaning and cosmetic brands, to name a few," said David Anderson, Vice President of Marketing at Green Biologics. "These certifications are becoming popular, not only for those with religious motivations, but also to the wider market as they are being used as an effective method for identifying high quality goods."

The recent certifications are an important milestone for Green Biologics' BioPure™ n-butanol and acetone, which are entirely produced using renewable feedstocks. Consumers and retailers are increasingly demanding products produced from natural or sustainable ingredients. Both n-butanol and acetone can also serve as additives and solvents in personal care, cosmetic, and both household and industrial cleaning products. For cosmetics, while acetone is most often used as a nail polish remover, BioPure™ n-butanol can be combined with acids derived from natural plant based oils to produce a wide array of 100 percent renewable butyl esters. These esters can be utilized in natural lipsticks, moisturizers, and nail polishes. Butyl esters are also utilized as aroma chemicals in fragrance products and flavor additives within the food industry.

In addition to the kosher and halal certifications, provided by the respective OK Kosher and Islamic Services of America certifying bodies, Green Biologics is also a member of the American Chemistry Council (ACC), and its commercial facility, Central MN Renewables LLC, participates in the ACC's Responsible Care® program. The company's n-butanol and acetone have received 100 percent bio-based, [USDA BioPreferred®](#) certification.

To learn more about Green Biologics, please visit www.greenbiologics.com.

About Green Biologics

Green Biologics Ltd (GBL) is a renewable specialty 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

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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 2017 and was recently named the best renewable chemical company in the U.K. in the 2016 Clean Energy Awards.

Green Biologics is transforming the global specialty chemicals market, providing its customers with products and technologies that are more sustainable and higher value than petroleum-based alternatives. For more information, visit www.greenbiologics.com.

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