

## Evonik markets novel chemical technology for more sustainable pharmaceutical production

- Evonik now offers ‘Chemistry in Water’ to enable classical organic reactions to be performed in water
- New technology allows drug manufacturing with improved environmental footprint
- Evonik is collaborating with Professor Bruce Lipshutz, University of California, Santa Barbara

**Essen, Germany.** From today, Evonik offers an innovative green technology that enables the large-scale synthesis of active pharmaceutical ingredients in water. The ‘Chemistry in Water’ technology has the potential to significantly reduce the environmental footprint of drug manufacturing by minimizing the need for large volumes of solvent and helping to simplify processes.

‘Chemistry in Water’ or ‘micellar chemistry’ uses surfactants which form microscopic spheres in water, called micelles. These function as nanoreactors and enable organic reactions, which are generally run in organic solvents, to be performed in water.

The successful integration of micellar chemistry into Evonik’s CDMO portfolio follows a collaboration with pioneering organic chemist Professor Bruce Lipshutz of the University of California, Santa Barbara.

“Improving the environmental footprint for the synthesis of active pharmaceutical ingredients is critically important for the sustainability of drug manufacturing going forward. It is a great pleasure to work with technology pioneer Professor Bruce Lipshutz and bring Chemistry in Water to commercial scale,” says Dr. Stefan Randl, head of Research, Development & Innovation for the Health Care business line of Evonik.

“After many years developing aqueous micellar chemistry, it is immensely rewarding to see industry applying and further developing its potential. I am confident that working closely with Evonik, as the first adopter for CDMO purposes, will pave the way

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for wider applications to industrial projects and overall, more sustainable chemistry,” says Bruce Lipshutz.

Apart from reducing the need for organic solvents in organic reactions, micellar chemistry also has the potential to generate higher yields and increase selectivity under mild conditions. Significant reduction of catalyst loading, energy consumption and waste production has been achieved using this approach for many reaction processes.

Evonik’s Health Care business is part of the life sciences division Nutrition & Care, for which sustainability is the guiding business principle. Evonik Health Care is one of the world’s largest CDMO (Contract Development and Manufacturing Organization) with capabilities to manufacture customized APIs/HPAPIs.

To address specific customer needs, Evonik has established a broad portfolio of advanced technologies which can be combined to support multi-step API synthesis. These technologies include continuous processing, fermentation, highly pure PEGs and mPEGs, transition metal catalysis, biocatalysis, organometallic/cryogenic chemistry, and from now on, Chemistry in Water.

### **More Information**

<https://healthcare.evonik.com/en/pharmaceuticals/api-contract-manufacturing/technological-capabilities/chemistry-in-water>

### **Company information**

Evonik is one of the world leaders in specialty chemicals. The company is active in more than 100 countries around the world and generated sales of €12.2 billion and an operating profit (adjusted EBITDA) of €1.91 billion in 2020. Evonik goes far beyond chemistry to create innovative, profitable and sustainable solutions for customers. More than 33,000 employees work together for a common purpose: We want to improve life today and tomorrow.

### **About Nutrition & Care**

The focus of the business of the Nutrition & Care division is on health and quality of life. It develops differentiated solutions for active pharmaceutical ingredients, medical devices, nutrition for humans and animals, personal care, cosmetics, and household cleaning. In these resilient end markets, the division generated sales of around three billion euros in 2020 with about 5,300 employees.

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