

Evonik strengthens its portfolio of nanoparticle technologies and services for parenteral drug delivery

28 September 2023

- Three block copolymers added to RESOMER® portfolio of bioabsorbable polymers
- New nanoparticle process technology increases options for nanomedicine formulations
- System Solutions meet demand for nano-pharmaceuticals

Main press contact

Elizabeth Hawkins

Market Communications
Health Care
Phone + 49 6151 59-3508
elizabeth.hawkins@evonik.com

Alternative press contact

Dr. Jürgen Krauter

Head of Market Communications Evonik
Phone +49 6181 59-6847
juergen.krauter@evonik.com

Essen, Germany. Evonik is strengthening its platform of parenteral drug delivery solutions with three new standard PLA-PEG di-block copolymers and a new nanoparticle formulation service using sonication technology. The copolymers (RESOMER® RP d) are especially suited to nanoparticle formation and can be used in a wide range of parenteral drug delivery applications including controlled and sustained release drug products. Nanosonication is a new process developed by Evonik to overcome process challenges and enable cGMP production of nanoparticles for drug delivery, for which RESOMER® RP d polymers are well suited.

By providing customers with an integrated parenteral drug delivery portfolio of functional excipients and CDMO services, Evonik is embracing System Solutions throughout the entire pharmaceutical value chain to provide customers with end-to-end offerings. The Health Care business at Evonik is part of the company's life sciences division, Nutrition & Care, which is guided by a vision that puts customer centricity and systems thinking at its core. The division aims to increase its share of system solutions from 20 percent today to 70 percent by 2032.

“We are delighted to increase our nanomedicine offerings and continue to meet the growing market demand for nano-pharmaceuticals,” said Paul Spencer, head of Drug Delivery & Products at Evonik's Health Care business.

Nanomedicine offers a toolbox to address specific needs related to increasing the therapeutic effects of drugs, and includes polymeric nanoparticles, liposomes, lipid nanoparticles, micelles, nano-emulsions, nanotubes and nanofibers. Nanomedicine can be used to overcome different hurdles such as drug solubilization,

Evonik Industries AG

Rellinghauser Straße 1-11
45128 Essen
Germany
Phone +49 201 177-01
www.evonik.com

Supervisory Board
Bernd Tönjes, Chairman
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Registered Office is Essen
Register Court Essen Local Court
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API targeting, protection of APIs from degradation, and API transport across biological barriers. Building on decades of experience formulating polymeric microparticles, liposomes, lipid nanoparticles and micelles, Evonik is further adding to its products and services portfolio.

Evonik's new offering of poly(DL-lactide) (PLA) and polyethylene glycol (PEG) di-block copolymers are used for controlled release applications and feature different molecular weight fractions. By adjusting the molecular weight of the mPEG (methoxy-PEG) and PLA blocks, the excipient attributes and formulation properties can be modified. As with all RESOMER® polymers, customization to include other monomers, molecular weights and weight-fractions is also possible.

Evonik's nanosonication service offering incorporates RESOMER® RP d polymers and expands on over 30 years of the company's encapsulation technologies for parenteral drug delivery. The continuous in-line nanosonication process can be scaled up to make bioabsorbable nanoparticles with encapsulated APIs for clinical supplies. External ultrasonic waves create cavitation bubbles which implode and cause temperature and pressure changes as well as shear forces leading to homogenization. The mild process conditions of this technique are ideally suited to protect sensitive APIs.

Evonik is one of the world's leading CDMOs for complex parenterals, with decades of experience in polymer-based and lipid nanoparticle-based drug delivery. Evonik leverages its expertise in the development, analysis, scale-up and production of all drugs – both small molecules and biologics – that rely on parenteral delivery technologies for new treatment modalities across a range of therapeutic areas.

Further Information

For more information about parenteral drug delivery at Evonik see: <https://healthcare.evonik.com/en/drugdelivery/parenteral-drug-delivery/cdmo-services/drug-delivery-systems/polymeric-systems>

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 €18.5 billion and an operating profit (adjusted EBITDA) of €2.49 billion in 2022. Evonik goes far beyond chemistry to create innovative, profitable, and sustainable solutions for customers. About 34,000 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 €4.24 billion in 2022 with about 5,700 employees.

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