

Press release

August 29, 2018

PDA Universe of Pre-filled syringes and Injection Devices, Orlando:

A team of experts for innovative pharmaceutical and biopharmaceutical primary packaging

Gerresheimer Gx Solutions is developing packaging solutions for the complex injectable drugs of tomorrow

Düsseldorf/Wackersdorf/Orlando, August 29, 2018. New sophisticated and sensitive injectable drugs require a new generation of custom-tailored pharmaceutical primary packaging. Gerresheimer is combining its expertise into a specialized team called Gx Solutions, an interdisciplinary expert and sales team able to utilize the development know-how of four Technical Competence Centers. The result is new packaging solutions for sensitive agents, enabling safe administration and more efficient drug delivery systems. Gx Solutions particularly also offers tailored services for biotechnologically manufactured medications and for smaller and medium-sized biotech companies. At the PDA in Orlando at the Hotel Loews Royal Pacific on 8 and 9 October, the team of experts will be on hand to speak to trade visitors for two days at booth 709.

Innovative medications are opening up new treatment options for illnesses, which were previously essentially untreatable. Agents are frequently produced using biotechnological means and utilize highly complex, protein-based molecules for the treatment of cancer, neurological conditions and eye diseases. This makes these new medications so sensitive that they require a new generation of pharmaceutical primary packaging, such as prefillable syringes, vials and cartridges, to be reliably effective. As a result, medications and packaging are increasingly being developed simultaneously through joint efforts of pharmaceutical companies and packaging manufacturers to create an ideal comprehensive solution quickly and economically.

Gerresheimer is meeting this trend with a new internationally positioned team of experts. "With Gx Solutions, we have assembled an interdisciplinary team of specialists offering development expertise, international development capabilities



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and global regulatory expertise," said Andreas Schütte, (member of the Management Board and responsible for the Plastics & Devices division at Gerresheimer AG). This team of experts no longer thinks in terms of product groups or materials like plastics and glass for its work, but rather develops comprehensive solutions perfectly matched to the requirements of specific markets, applications and patient groups. "Gx Solutions is able to utilize more than 430 product designers, engineers, technicians and skilled workers in the fields of plastics and glass at our Technical Competence Centers in Germany, the US and China," explained Manfred Baumann (Global Executive Vice of President Sales & Marketing, Administration & TCC, Management Board) at Gerresheimer Regensburg GmbH). "The unit has everything from a quality laboratory to special machine construction to small-batch production at its disposal, which we are able to utilize to produce samples for clinical testing. Thanks to our small-batch production capabilities for syringes, vials and cartridges, which will be established in Q3 2019, we will be able to respond to customer wishes quickly and flexibly."

One area of Gx Solutions' activity is the development of primary packaging, which interacts as little as possible with the medications it is filled with. Special patented technologies for cone forming and interior coating have been developed for the prefillable Gx RTF syringes, for example. This makes it possible to offer Gx RTF syringes in silicone oil-reduced and metal-free versions. Prefillable syringes made of new and innovative materials like COP (Cyclic Olefin Polymer) plastics can also be produced. Solutions for increasing user safety and user friendliness, such as especially break-proof packaging, safety systems like Gx InnoSafe for the prevention of needle stick injuries and primary packaging for patients with limited motor capabilities are also important. A third area of activity of Gx Solutions is packaging concepts, which are ideally matched to the development and production processes used by pharmacists. With Gerresheimer Gx RTF vials in the Ompi EZ-fill packaging format, identically packaged sterile injection bottles can be obtained from two different manufacturers

Gerresheimer will also showcase its products and services at CPhI Worldwide in Madrid from October 9.-11 at the Ifema fairground hall 4, booth C30.

About Gerresheimer

Gerresheimer is a leading global partner to the pharma and healthcare industry. With specialty glass and plastic products, the Company contributes to health and well-being. Gerresheimer operates worldwide and its approximately 10,000

GERRESHEIMER

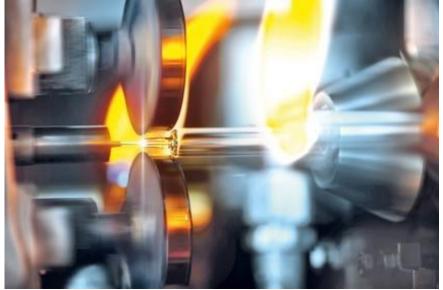
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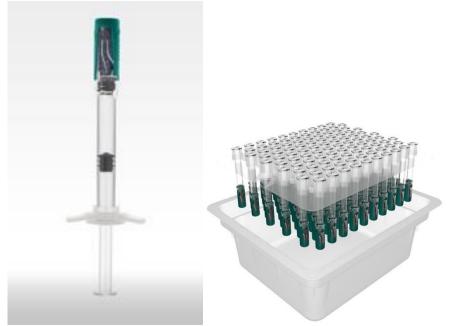
employees manufacture products in local markets, close to its customers. With our plants in Europe, North America, South America, and Asia, we generate revenues of approximately EUR 1.4 billion. The comprehensive product portfolio includes pharmaceutical packaging and products for the safe, simple administration of medicines: Insulin pens, inhalers, prefillable syringes, injection vials, ampoules, bottles, and containers for liquid and solid medicines with closure and safety systems as well as packaging for the cosmetics industry.

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New process for the cone forming of Gx RTF syringes: In the new process, the pin used for cone forming no longer consists of tungsten or an alternative metal, but of a special ceramic.



Gx RTF syringes combined with a safety system to prevent needle stick injuries