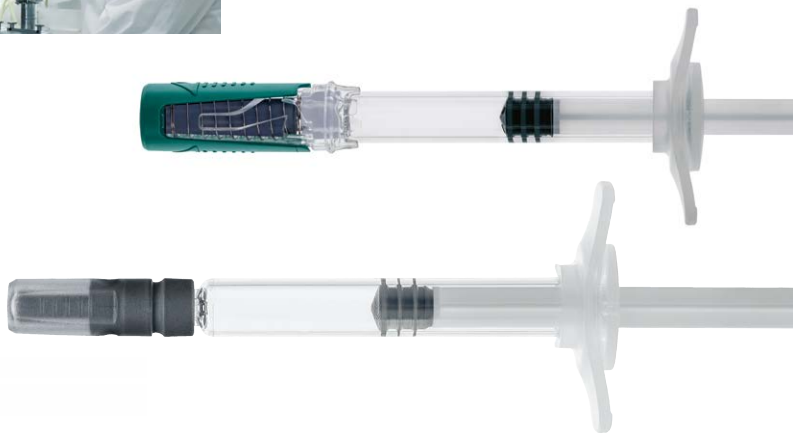
UPDATE.25

GERRESHEIMER

Customer Newsletter
July 2018

Gx® Solutions:
an interdisciplinary team of experts for the packaging of sophisticated and sensitive injectable drugs



Expansion of the Technical Competence Center (TCC) in Wackersdorf (Germany): the area of focus on plastic is now complemented by the material glass

Optimum product quality with the new Gx® RTF vials:
standardized packaging platform for nests and tubs, as well as trays

MultiShell® vials
combine the best features of glass and plastics

New prefillable syringes:
Impact of the ongoing biopharmaceutical manufacturing trends

A team of experts for innovative pharmaceutical and biopharmaceutical primary packaging

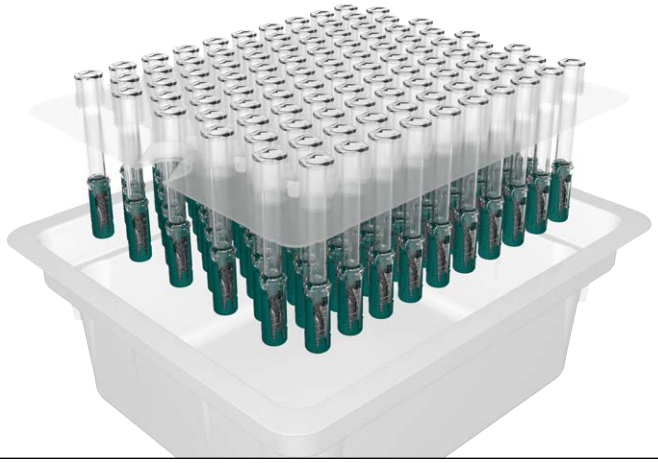
Gerresheimer Gx® Solutions is developing packaging solutions for the complex injectable drugs of tomorrow

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.

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 and global regulatory expertise," said Andreas Schütte, (member of the Management Board and responsible for the Plastics & Devices division at Gerres-

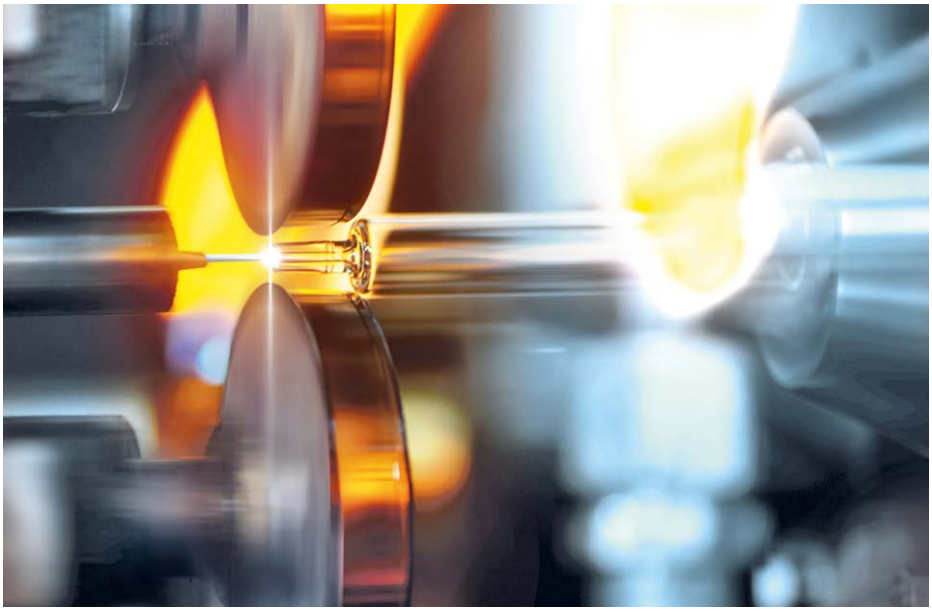
Gx® SOLUTIONS



heimer AG). This team of experts no longer thinks in terms of product groups or materials like plastics and glass for its work, but instead in terms of customer needs, especially those of customers who develop new and biotechnological medications. The team develops comprehensive solutions perfectly matched to the requirements of specific markets, applications and patient groups. Customers are thereby supported jointly by the employees from technical support and those from Gx® Solutions and syringes sales, who are responsible for the product developed by Gx® Solutions. "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, as well as a globally active sales team," 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 pharmaceutical companies. With Gerresheimer Gx® RTF vials in the Ompi EZ-fill® packaging format, identically packaged sterile injection bottles can be obtained from two different manufacturers.

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



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.

TECHNICAL COMPETENCE CENTER (TCC)

Gerresheimer is investing tens of millions in creating 3,000 square meters of additional space for the development and industrialization of glass products.

Gerresheimer is now also expanding the Technical Competence Center in Wackersdorf to include pharmaceutical glass products

Gerresheimer Medical Systems is expanding its Technical Competence Center (TCC) at the Wackersdorf location. The company is investing tens of millions in creating 3,000 square meters of additional space for the development and industrialization of glass products, such as syringes and cartridges. The task area of the Technical Competence Center is thus being expanded beyond the previous area of focus on plastics to include the additional material of "glass." Construction began recently, and the project should be completed by the end of the year.

Gerresheimer AG offers pharmaceutical and medical technology products of plastics and glass in its Medical Systems business unit. The strategy of the company to merge its competence for both materials under one roof is now also being expanded to the development and industrialization areas. The Technical Competence Center (TCC) in Wackersdorf was previously responsible for the development and industrialization of products made of plastics. Innovative glass products, such as pre-fillable syringes and cartridges will also be prepared for series production here in future. The establishing of glass competence in the TCC will expand the technology portfolio at the Wackersdorf location. The Technical Competence Center bundles all areas required for the technical and process organization realization of products. Twenty-five new jobs will be created by 2020 for this purpose.

One focus of the expansion is the establishing of small batch production for pre-fillable glass syringes and cartridges. Here it is possible to produce pre-series modules from glass forming to ready-to-ship, washed, and siliconized ready-to-fill systems. The focus is on syringes and cartridges for especially sophisticated, biotechnologically manufactured medication, clinical samples for approval, or prototypes for process and technology development. At the same time, glass competence is also being established in the Automation Systems area (special machine engineering) in order to develop innovative technologies for glass forming and automation. New generations of glass forming lines for syringe production will in future originate in a cooperation between the Bünde and Wackersdorf locations. "In addition to the expansion of the technology portfolio, the expansion of small batch production and automation systems in Wackersdorf, we should also focus on large batch production at our location in Bünde, which previously had to be interrupted at considerable expense and effort for development projects and start-ups for new products," comments Manfred Baumann (Global Executive Vice President Sales & Marketing, Administration & TCC, Management Board, Gerresheimer Regensburg GmbH) on the expansion.

Ready-to-fill vials coming soon

Gerresheimer will also be offering its vials as ready-to-fill products in the future. These vials can be filled by the customer without any further preparatory work. For packaging, Gerresheimer uses the well-known Ompi EZ-fill® format, which enables the customer to use vials from two different manufacturers with their filling system.

In the division of labor between the pharmaceutical industry and manufacturers of primary packaging, pharmaceutical producers are increasingly concentrating on their core area of expertise and leaving the numerous preparatory tasks to the packaging industry. In the syringe field, Gerresheimer has been fulfilling these requirements for years with its Gx RTF® syringes. With the ready-to-fill process, syringes are delivered to the customer washed, packed into trays or nests/tubs and sterilized. This means that the syringes can be filled without any further preparatory work by the customer. This model for success is now also being used by Gerresheimer for vials.

Highest product quality with Gx® RTF vials

The new Gx® RTF vials made of type I borosilicate glass offer optimum product quality and fulfill all the requirements of the relevant ISO standards and pharmacopoeias (USP and Ph. Eur.). Manufacture on state-of-the-art RTF production lines ensures precise product dimensions and optimum product quality. Glass-to-glass contact, and thus glass breakage, cosmetic defects and particle contamination, are also reduced after production thanks to the Ompi EZ-fill® packaging format. "Our new injection bottles fulfill the customer's desire for comprehensive solutions. By establishing a standardized packaging platform for sterile bottles, we are radically simplifying the process for the customer," said Andreas Schütte, Member of the Management Board and responsible for the division Plastics & Devices at Gerresheimer, of the decision in favor of this new generation of vials.

Flexibility from clinical testing to large-batch production

The new products are currently available in the 2R, 6R and 10R (4 – 13.5 ml) formats for nests and tubs, as well as in trays. Other formats will follow. Thanks to this new packaging solution, vials can be used with minimal conversion of filling lines from the development phase of new medications to small-batch production through to large-batch production.

More information:
Gx® RTF Vials powered by Ompi EZ-fill®
Gx RTF® Spritzen

MultiShell® vials –

combine the best features of glass and plastic

MultiShell® vials combine the best properties of plastic and glass packaging for drugs in liquid form. They are available with a monolayer structure made from cyclic olefin polymer (COP) or with a distinctive multilayer structure featuring two layers of COP sandwiched around a central polyamide (PA) layer. The vials boast unique barrier properties that improve the drugs' stability and thus extend their shelf life accordingly. Their multi-layered structure is incredibly resistant to punctures, preventing the liquid from escaping even under extreme mechanical loads and making the vials an ideal packaging solution for cytotoxic drugs. The vials are available in 2, 5, 10, 50, and 100 ml sizes.

MultiShell® vials combine the transparency of glass with the shatter-resistance of plastic, creating an innovative form of primary packaging that boasts unique barrier properties for drugs in liquid form.

MultiShell® Vials (COP, PA, COP):

- Unique barrier properties
- Superior break resistance
- Inert against high and low pH value (no delamination)
- Low absorption (protein derived active ingredients)
- No heavy metal ions release
- Available in 2, 5, 10, 50 and 100 ml
- Available in RTW, RTS, RTU

Monolayer Vials (COP)

- Break resistance
- Inert against high and low pH value (no delamination)
- Low absorption (protein derived active ingredients)
- No heavy metal ions release
- Available in 2, 5, 10, 50 and 100 ml

SYRINGES

Recent prefillable syringe developments mirroring increasing biotech drug product demands

The global biopharmaceuticals market accounted for $ 160 Billion in 2014, and it is expected to grow with a CAGR of 9.6% during 2015-2020 outpacing the global pharma market growth. Many biotech derived drugs have to be administered by injection using vials, cartridges or prefillable syringes as primary packaging containers. The specific needs of protein based drug product formulations pose new challenges to the already existing primary packaging solutions.

Some of the trends which can be generally observed in the pharma injectable market are:

- Shift to self-medication to increase patient convenience and safe costs which is linked to an increasing demand of easy to use delivery devices like auto injectors, pump systems
- Increased regulatory scrutiny and quality requirements for patient safety
- Increased focus on understanding and anticipating user needs (continuous exploration of the patient experience, patient adherence/compliance)

In addition to this some of the ongoing biopharmaceutical manufacturing trends ask for increased flexibility on the supplier side. More and more biological product applications are being made, but often for small indications which results in smaller batch sizes with high – and specific – quality demands. This is supported by the growing market for biosimilars/biogenerics. As a result more automation, monitoring, and process control during production requests higher quality packaging materials.

For syringes all these trends are grouped in four different areas demanding different innovative primary packaging solutions as well as continuous production process improvements (picture).

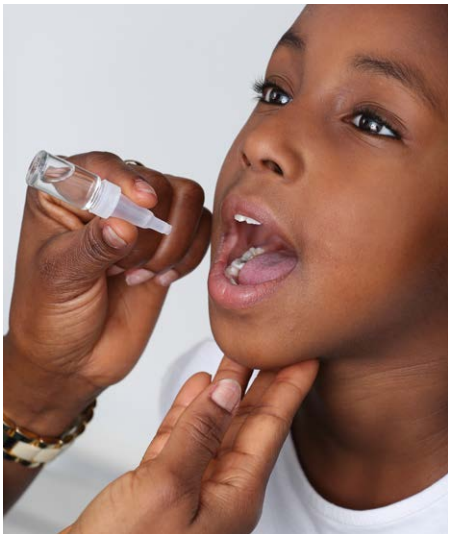
Global Pharma Market Trends impact on Prefillable Syringe Evolution

Biocompatibility	• Glue residuals • Tungsten oxides • Silicone oil particles	▮ Gx RTF® ClearJect® Pre-fillable COP Syringes ▮ Metal-free cone bore forming ▮ Low tungsten process ▮ Silicone-oil reduced Gx Baked-on RTF® syringes
End user safety	• Screw cap closures • Needle stick prevention • Breakage resistance	▮ Gx TELC® ▮ Gx InnoSafe® (safety syringe) ▮ Modern glass forming technology
Device compatibility	• Specific dimensional requirements for device applications like auto injectors	▮ Modern glass forming technology ▮ Proprietary Gx® G3 inspection system
Total Cost of Ownership	• Low cosmetic defects • Secure supply chain • Low particle load	▮ State of the art proprietary inspection system ▮ No glass-to-glass contact during forming and ready to fill processing ▮ Washing machine after glass forming

From: Stefan Verheyden, Global Vice President Gx® Solutions & Sales Syringes Medical Systems, in: Drug Delivery and Development, May 2018, Vol. 18, No. 4, pp. 20–23.

INDIA

Gerresheimer's Indian plants make high-quality glass primary packaging for the whole world



Gerresheimer owns two plants at its Kosamba site in India that produce pharmaceutical packaging whose quality conforms to the most stringent international standards: Neutral Glass and the new Gerresheimer Pharmaceutical Packaging Mumbai factory. Neutral Glass manufactures moulded glass products for the pharmaceutical industry. The plant will soon receive a new high-performance furnace for making type I glass. Gerresheimer's recently constructed plant manufactures vials and ampoules using tubular glass.

ISO 15378 certification for the new plant in Kosamba

"Our new plant in Kosamba produces ampoules and vials made from borosilicate glass to the same high standards as apply in Europe or the Americas. All of our production and inspection processes are standardized and certified worldwide," says Saibal Sengupta, Director Sales, who is always on hand to advise customers looking for a suitable solution for their drug.

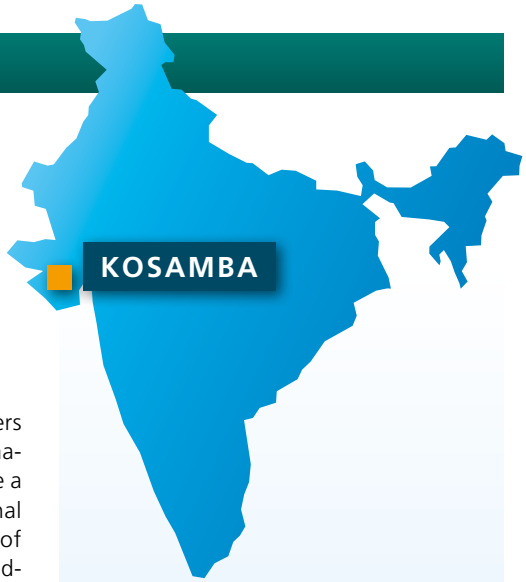
The new plant is certified in accordance with the following standards: ISO 9001:2015, US DMF Type III, and Health Canada (DMF). Recently it was also awarded the ISO 15378 certification. ISO 15378 applies to primary packaging that comes into direct contact with medication. The standard covers all materials commonly used to make primary packaging such as glass, rubber, aluminum, and plastic. ISO 15378 gives all contract manufacturers and all manufacturers that package such materials themselves an opportunity to secure a high GMP standard and gain international acceptance at an early stage. Suppliers of primary packaging for pharmaceutical products benefit from the fact that the standard incorporates all the relevant GMP requirements and facilitates compliance with international, European, and national law.

Rebuilding the furnace for type I glass at Neutral Glass

"Constructing a new furnace for type I glass will significantly enhance our quality," says Sachin Sule, Head of Sales & Marketing for Moulded Glass. In India, for example, Gerresheimer manufactures clear and amber glass infusion and injection bottles from type I borosilicate glass. The company also produces type III glass containers for a large number of medications. The production line at this factory is certified in accordance with DMF (Drug Master File) type III requirements.

Gerresheimer's complete range encompasses all classes of glass used for pharmaceuticals – types II and III sodium silicate glass as well as type I borosilicate glass. This enables the company to supply the perfect glass packaging to suit drugs of any shape or size. Its extensive glass range means that appropriate packaging solutions can be found for even the most sensitive pharmaceuticals.

Gerresheimer offers a portfolio of glass pharmaceutical bottles extending from the smallest glass cartridges made from tubular glass up to large acid-resistant chemicals bottles.



OUR TUBULAR GLASS PLANT IN KOSAMBA, INDIA

- Founded in 2016
- Vials made from glass type I
- Ampoules made from glass type I
- Flint and amber glass
- Expansion coefficient 33 & 51
- Sizes from 2 to 30 ml
- Crimp neck, screw neck, printed and aluminium sulfate treated
- ISO 9001-2015
- DMF Type III
- US, EP, JP compliant
- Proprietary visual inspection systems: Gx® RHOC for dimensional gauging and Gx® G3 for cosmetic inspection
- Other tubular glass production sites in Europe and the Americas for risk mitigation

OUR MOULDED GLASS PLANT IN KOSAMBA, INDIA

- Founded in 1989
- Serum bottles, intravenous bottles, injection bottles, pharmaceutical jars, nail polish bottles
- Clear and amber glass
- Type I borosilicate glass und type III glass
- 4 furnaces
- Clean-room
- State-of-the-art inspection systems
- ISO 9001
- DMF Type III
- Other moulded glass production sites in Europe and the Americas for risk mitigation

AMERICA

Gerresheimer Plastic Packaging starts production in North America

The successful Triveni plastic containers, equipped with the tried-and-tested induction sealing liner to serve as TE-protection, will now also be produced in the U.S. to the same high level of quality as in Kundli, India. The products will be manufactured under clean-room production, which is unusual for manufacturing of solid packaging in the U.S.

Gerresheimer has started producing the Triveni containers at Centor in Berlin, Ohio. Part of the Gerresheimer Group since 2015, Centor is a leading manufacturer of plastic containers for prescription-only drugs destined for end users in the U.S.

Triveni containers for the U.S. market

"These containers are in high demand in the U.S. market and, with our expertise and standard of operation, we expect production to be a great success," says Niels Düring, Global Executive Vice President Plastic Packaging. The round HDPE containers have been specifically developed to meet the requirements of the U.S. market and are available in among others 30, 50, 60, 75, and 100 ml sizes.

Eye dropper bottles with a fixed TE-ring

Also produced at the Centor company under the same conditions will be the US eye dropper bottle systems. The US Food and Drug Administration (FDA) now stipulates that the TE-ring must be firmly attached to the bottle to protect the original contents. Gerresheimer's US type drop bottle comes fitted with a TE-ring that is fixed in place on the bottle. The existing "European type" bottle system has been slightly modified to comply with the US market requirements. The dimensions, properties, and material remains however the same and minimize change control procedures. The bottle and the dropper are made from LDPE and the cap from HDPE. The US type dropper bottles can therefore be used for stability tests.

Gerresheimer Querétaro

New Distiller for ETF process

Water is a valuable resource all over the world, it is not strange that our pharmaceutical clients demand high quality water used in any stage of their process.

Water used by or for pharmacy products is regulated through the Pharmacopoeias and it is classified based on quality characteristics. One of the highest standards defined by the EP and USP (European pharmacopeia and US pharmacopeia) is that of water classified as WFI (water for injection) which is suitable for any parenteral device worldwide.

The current methodology to obtain WFI is by use of a pre-treatment, polishing and finally through a distiller. The distiller will render the final characteristics in order to comply with all microbiological and physical/chemical specifications.

Last January Gerresheimer Queretaro finally received a multistage distiller pharma grade from Europe. The installation was preceded a long period of engineering studies in conjunction with the supplier, and a multidisciplinary teamwork effort, involving personnel from different areas such as Projects, Purchasing, Validation, Quality and Operations, working together day to day. The efforts payed off when Installation took place however starts up tasks commence long before since the first paper design in 2016.

Currently the system has undergone a demanding validation plan of IQ, OQ and PQ (installation, operation and performance Qualification). That will strengthen the pharmaceutical requirements.

"With this new addition to the ETF (Easy to fill) operation, capable of washing with WFI, depyrogenation and terminal ETO sterilization, we stand ahead a strong and robust process within the ETF market for vials and syringes," explains Hector Garcia, Managing Director von Gerresheimer Queretaro.

WORTH A READ

Recent Prefillable Syringe Developments Mirroring Increasing Biotech Drug Product Demands,

Drug Delivery and Development, by Stefan Verheyden, May 2018, Vol. 18, No. 4, pp. 20–23. (See summary of this article on page 6 of this newsletter).

Special Feature von Cindy H. Dubin:

Prefilled Syringes and Parenteral Manufacturing: Drug and Packaging ensure Safety, Compatibility, and Stability

Drug Delivery and Development, May 2018, Vol. 18, No. 4, pp. 65–73.

Bend Zeiss, Gerresheimer Bünde GmbH

Tungsten in the production of prefillable syringes – also possible without tungsten

in: LaVague, No. 57, April 2018, pp. 49–51.

The reduction of tungsten and the metal-free production make a big contribution to making pre-filled syringes safer. The prefillable syringe can thus be used even more broadly and is even better suited for sensitive biotech drugs.

Gerresheimer's Neutral Glass invests in extra furnace

Glass International, March 2018

Avijit Sanyal, Plant Head of Neutral Glass & Allied Industries discusses the company's recent furnace investment and acquisition by German glassmaker Gerresheimer. The new furnace K means the company can still produce high quality pharmaceutical and cosmetics glass while being environmentally friendly at the same time.

PEOPLE

Julie Storie has been appointed as Director Supply Chain Americas Tubular Glass and Customer Service Americas Primary Packaging Glass

Julie Storie has been appointed as Director Supply Chain Americas Tubular Glass and Customer Service Americas Primary Packaging Glass effective since April 16, 2018.

Julie joined Gerresheimer in 1993. In her last position, she was Director Supply Chain Management Americas Tubular Glass. Prior to that, she was Director Materials Management Tubular Glass Americas.

Patrice Stazzu has been appointed as Managing Director Chalon

Patrice Stazzu has been appointed as Plant Director Chalon and Director Engineering & Projects Europe Tubular Glass effective from March 1, 2018. In addition, he will be Managing Director Chalon.

Patrice joined Gerresheimer Queretaro in 2012 as Director Operations. Prior to that, he worked for Afe Cronite in Monterrey, Mexico, as General Plant Manager. He began his career in the automotive industry in Europe and North America, including thirteen years in Mexico.

Khasim Saheb has been appointed as Senior Director India Primary Packaging Glass & Managing Director

Khasim Saheb has been appointed as Senior Director India Primary Packaging Glass & Managing Director effective from April 5, 2018. In this function he will also be responsible for the sales activities for Primary Packaging Glass in Southeast Asia.

Before joining Gerresheimer Khasim worked for Nipro PharmaPackaging. In his last function he was Managing Director for the tubing business in India and Southeast Asia with P & L responsibility and Head of Operations. Prior to that, he worked for Schott Glass India as Senior Manager Production.

Thomas Rau has been appointed as Global Senior Director Quality Moulded Glass

Thomas Rau has been appointed as Global Senior Director Quality Moulded Glass effective from April 3, 2018.

Thomas is well known to Gerresheimer. From 2006 to 2012, he worked for the Moulded Glass plant in Essen where in his last functions he was Manager Quality Assurance / Quality Management and Technics and Production Manager. Prior to that he worked for Tettauer Glashütten-Werke in Friedrichsdorf, Germany, as Manager Quality. In his last function, he worked for Verallia Saint-Gobain where he held the position of Quality Director at Verallia North Europe.

Dirk Wypchol has been appointed as Senior Plant Director and Managing Director of Gerresheimer Lohr Moulded Glass

Dirk Wypchol has been appointed as Senior Plant Director and Managing Director of Gerresheimer Lohr Moulded Glass effective from April 1, 2018. In the next two months he will go through an onboarding and training phase at the Moulded Glass plant in Essen before he taking over his responsibilities in Lohr in the summer.

Before joining Gerresheimer, Dirk held the position of Plant Director at Plastic Omnium. Prior to that, he worked for Fauercia as Plant Manager.

Mavis Chai has been appointed as Senior Sales Manager Plastic Packaging South East Asia

Mavis Chai has been appointed as Senior Sales Manager Plastic Packaging South East Asia effective from May 21, 2018. Mavis operates from our Singapore office.

Mavis has several years' experience from the packaging industry and latest from a position as Key Account Manager at O-I BJC Glass Malaysia.

WEB & EVENT

Annual General Meeting of Gerresheimer AG approves dividend increase to EUR 1.10 per share

The distribution of a dividend of EUR 1.10 per share was approved at the Annual General Meeting of Gerresheimer AG held on May 25, 2018 in Duesseldorf. The MDAX-listed Group produces glass and plastic pharma and cosmetics packaging and products for safe and simple drug delivery such as insulin pens, inhalers and syringes.

"In the pharma and healthcare markets important to us, the year 2017 that we now look back on was characterized by uncertainty, above all as a result of developments in the US. I am confident that the global pharma markets will pick up again in the years ahead and that we will deliver sustained and profitable growth. It is important to us that our shareholders participate in our financial success. Accordingly, we are increasing the dividend for the seventh year in a row," said Rainer Beaujean, Speaker of the Management Board and CFO of Gerresheimer AG, summing up at the Annual General Meeting.

The detailed voting results on all items of the Annual General Meeting agenda and the speech delivered at the Annual General Meeting are available here:
www.gerresheimer.com/en/investor-relations/annual-general-meeting

The Annual Report is available here:
www.gerresheimer.com/en/investor-relations/reports

FCE Pharma 2018:

Gerresheimer expands production of pharmaceutical plastic packaging in Brazil

This year, Gerresheimer has once again presented its products to a specialist audience at FCE Pharma in Sao Paulo, Brazil from May 22 to 24. The company has already won the prestigious Sinduspharma Award many times down the years.

Gerresheimer is further expanding its strong presence on the South American market. The new Gerresheimer Anápolis plant has commenced production in the Brazilian state of Goiás in order to secure and support the continued strong growth.

„We are delighted about the strong demand for our plastic packaging in South America and with the additional plant we will be able to further expand our presence and support our customers's," says Jens Friis, Vice President Europe & Latin America, adding that Gerresheimer's customers include both national and international companies.

Ten years ago, in 2008, Gerresheimer acquired Allplas, adding Vedat three years later. The company has thus steadily consolidated its position as Brazil's market leader with some strategically astute acquisitions.

"We're in a position to provide our customers with customized plastic packaging solutions," says Wellington Lentini, General Manager Brazil, detailing Gerresheimer's offering. However, its standard range of dropper bottles of various sizes, droppers, caps, vials for individual doses with corresponding caps, PET bottles, and closures for plastic and glass bottles also boasts a wide range of uses.

In future, Gerresheimer Anápolis will produce the entire range of plastic containers from PP, PE, and PET, along with the corresponding closures and caps. The products will also be assembled and decorated in the plant providing customers with a complete concept solution. The newly built plant will initially operate over 3,200 square meters and will be equipped with 30 machines during the course of 2018. The plan is to extend further to 20,000 square meters by 2021. Just like all the other Gerresheimer plants, the new one will be certified to ISO 9001 too.

Gerresheimer in Latin America

With its new plant, Gerresheimer has a presence in two Brazilian states. Alongside Goiás, Gerresheimer is also represented in the São Paulo region, where three plants (Butantã, Cotia, and Embu) provide the full range of pharmaceutical primary packaging made from plastic. The company also has another factory in Argentina (Buenos Aires). Gerresheimer produces insulin pens for South America in Indaiatuba, some 100 km north of São Paulo.

WEB & EVENT

News from our download section at www.gerresheimer.com

New single dose flyer

Gerresheimer Plastic Packaging has brought out a small vial that can be used to administer single doses. It is made from PET and is available in three sizes: 10, 15 and 20 ml. This makes it perfect for vitamins and minerals in particular, although it is also suitable for cosmetic use. The vial, along with the corresponding caps, is being produced at Gerresheimer's production sites in Zaragoza (Spain) and Buenos Aires (Argentina). The new flyer presenting the single-dose vial is published in English and Spanish and is available to download via the link below:
https://www.gerresheimer.com/uploads/tx_szpdfbook/Gx_Flyer_Monodosis_en_low/

New Chinese catalog: Pharmaceutical Plastic Packaging

Gerresheimer Plastic Packaging specializes in the widely varied spectrum of pharmaceutical plastic packaging within solid, liquid and ophthalmic applications. Our leading brands Duma®, Dudek™ and Triveni for solid dosage, edp-branded PET bottles for liquid dosage and our ophthalmic products form part of a comprehensive and innovative product range.

Our standard range includes a wide choice of different types of containers and closures, PET bottles, eye droppers, nasal sprays, nebulisers as well as numerous customized developments.

For the first time, the most important ranges of solid, liquid, and opthamological products have been compiled in a catalog published in Chinese. The 32-page brochure provides information about the products, including accessories, with pictures and all of their specifications. It is available to download as a browsing catalog via the link below:

https://www.gerresheimer.com/uploads/tx_szpdfbook/Gx_GPP_China_low_single/

New version of Medical Systems Brochure

Gerresheimer Medical Systems produces innovative drug delivery systems, as well as medical and diagnostics devices for well-known customers from around the world. As a full service provider, we assume responsibility for all stages of the value creation chain, from planning to ready-for-sale, CE-marked products: Concept development, industrial design and product development through production equipment design, mold making and special-purpose machinery engineering to large and small series production under FDA/GMP conditions, assembly, pharmaceutical assembly and filling, as well as sterilization and packaging – at Gerresheimer Medical Systems you receive all services from one source.

The completely revised brochure is almost 50 pages long and presents the products offered by Gerresheimer's Medical Systems Business Unit across all stages of the value chain described. It provides an overview of the variety of customized solutions offered and is available in German and English:
https://www.gerresheimer.com/uploads/tx_szpdfbook/Customized_Drug_Delivery_Systems_Medical_and_Diagnostic_Products_2018-04-neu/

GERRESHEIMER
EVENT CALENDAR 2018

AUGUST 02–04, 2018
MediPharm Expo
Ho-Chi-Minh City, Vietnam
Saigon Exhibition and Conferences Center

SEPTEMBER 03–05, 2018
CPhI Middle East and Africa
Abu Dhabi, United Arab Emirates
ADNEC | Hall A32

SEPTEMBER 26–28, 2018
MedTec China
Shanghai, China
Shanghai World Expo Exhibition and Convention Center | Stand H401

OCTOBER 08–09, 2018
PDA Universe of Pre-filled Syringes and Injection Devices
Orlando, USA
Loews Royal Pacific

OCTOBER 09–11, 2018
CPhI Worldwide
Madrid, Spain
Ifema | Hall 4C30

OCTOBER 14–17, 2018
Pack Expo
Chicago, USA
MCCORMICK PLACE
Hall 964

OCTOBER 29 – NOVEMBER 01, 2018
CMEF
Shenzhen Chi, China
Shenzhen Convention & Exhibition Center

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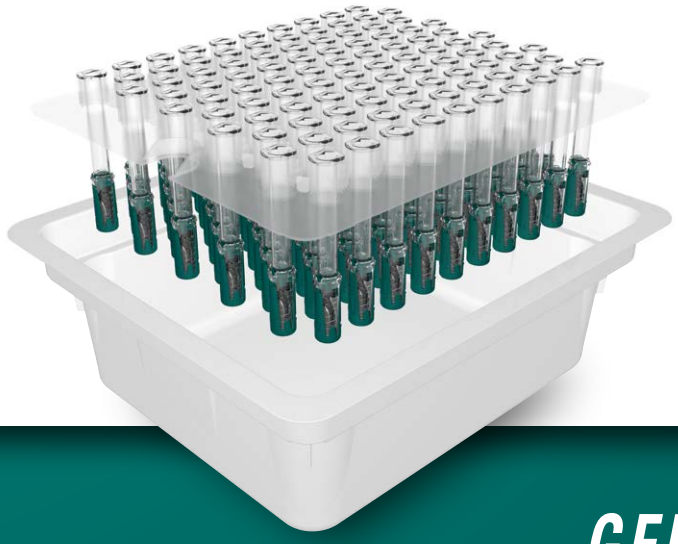
Gx InnoSafe®

Integrated Safety System

- **Protection against needlestick injuries**
- **Eliminates the possibility of reuse**
- **Fully passive safety function:**
  protection mechanism is activated automatically – no additional actions required
- **Fully integrated system:**
  delivered pre-assembled in nest and tub



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