

Customer Newsletter
May 2017

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WELCOME



More flexibility for you, the customer – this is what the new Gx® RTF vial concept is all about. Read our title story for the full details. Gerresheimer now offers

sterile injection vials that can be filled straight away without the need for extra process steps.

Although vials may have overtaken ampoules as the main form of primary packaging for injectables in the developed markets, worldwide it is still the ampoule that holds sway. Find out why in the article on our zero-defect production strategy for these products.

Since the end of last year, we have been manufacturing ampoules and vials not just in Europe, America and China but in India as well. This issue tells you all you need to know about our new converting plant in the Indian city of Kosamba and which produces ampoules and vials in accordance with the latest international standards.

You can also learn more about our very own simulation software that we developed for container glass molds and about the investments we have made in our Pfreimd site.

Enjoy reading!

Jens Kürten

Group Senior Director
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Ready-to-fill vials

Gerresheimer complements its primary packaging portfolio introducing Gx® RTF vials

Gerresheimer will enhance its portfolio by adding Gx® RTF vials. Ready-to-fill or ready-to-use vials are the state of the art solution to fulfill customer requirements regarding quality, flexibility and less complexity. To achieve this, Gerresheimer and Ompi have signed a mutual agreement in order to allow Gerresheimer to use the Ompi EZ-fill packaging technology. The new products will provide the customers with more flexibility: either with small batches, initially at the clinical trials stage, or with industrial production.

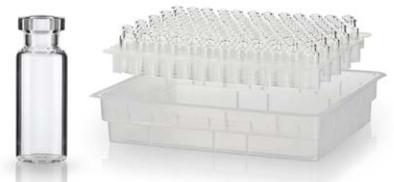
“Our new portfolio will meet the growing demand for comprehensive solutions. Together with Ompi we will make a further step towards establishing one standardized platform for ready-to-fill vials, which make the customer process very easy and smooth,” said Uwe Röhrhoff, CEO of Gerresheimer AG.

“We’re glad our leading technology has been adopted by Gerresheimer. Our solution, which has proved to be scalable, will benefit the customer with more flexibility, increased quality and safety and quicker time to market,” said Mauro Stocchi, General Manager Pharmaceutical Systems division at Stevanato Group.

Vials are the standard primary packaging for parenteral drugs. Gerresheimer offers vials in all sizes corresponding to international standards and pharmacopoeia requirements. Gerresheimer offers solutions for biotech and other specialist pharma drugs. The new Gx® RTF vial portfolio will be based on already

established quality offerings for vials like PharmaPlus and Elite Glass. Adapting this knowledge to vials and combining it with the well-established Ompi EZ-fill® packaging solution provides added value to customers, enabling them to source one identically packed vial from two suppliers.

Ready-to-fill vials are washed and sterilized solutions provided in trays or in nests and tubs. The pharmaceutical customer can immediately fill the ready-to-fill vials without any further process. Gerresheimer has been producing Gx RTF® glass syringes (ready to fill) for more than 15 years already and has recently launched Gx RTF® ClearJect® syringes produced in Europe.

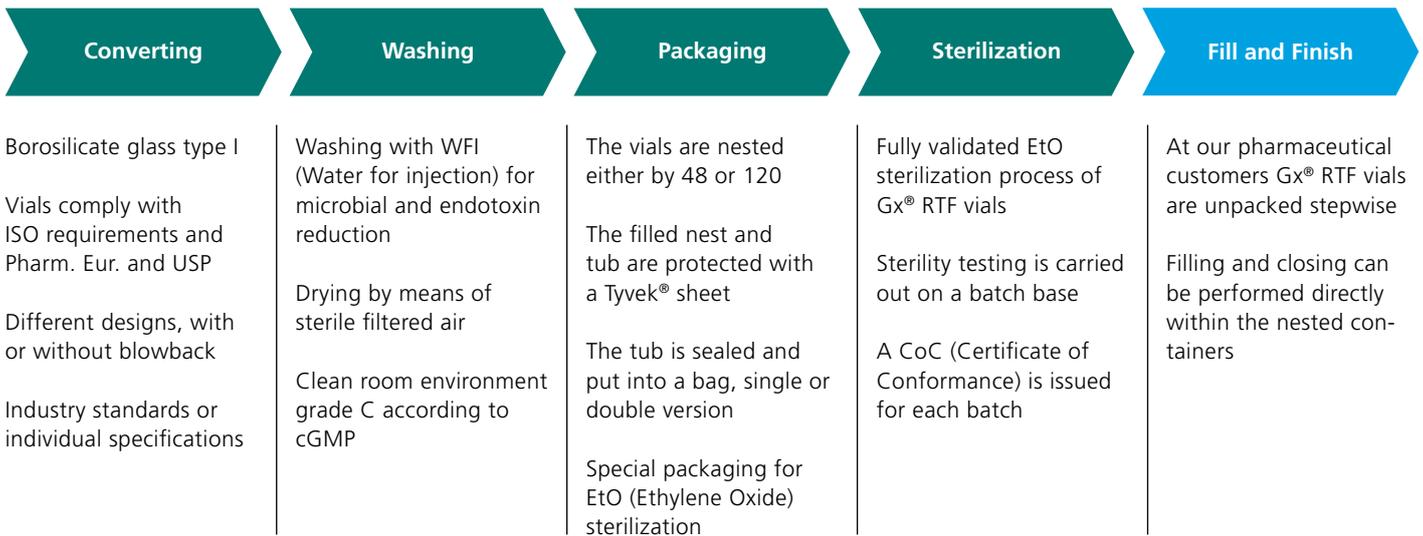


COVER STORY

Gx[®] RTF process for sterile vials

Gx[®] RTF Process powered by  | 

Pharma Company



Benefits for our customers

- Enhancing flexibility supporting your packaging needs from clinical stage to industrialization
- Using established packaging formats powered by Ompi EZ-fill[®]
- Tailor-made Gx[®] RTF vial quality powered by Ompi EZ-fill[®] provides you with increased quality regarding breakage, cosmetic defects and particles
- Improving your total cost of ownership
- Minimizing your risks based on our leading expertise for primary packaging
- One common packaging standard facilitates dual sourcing and reduces risks

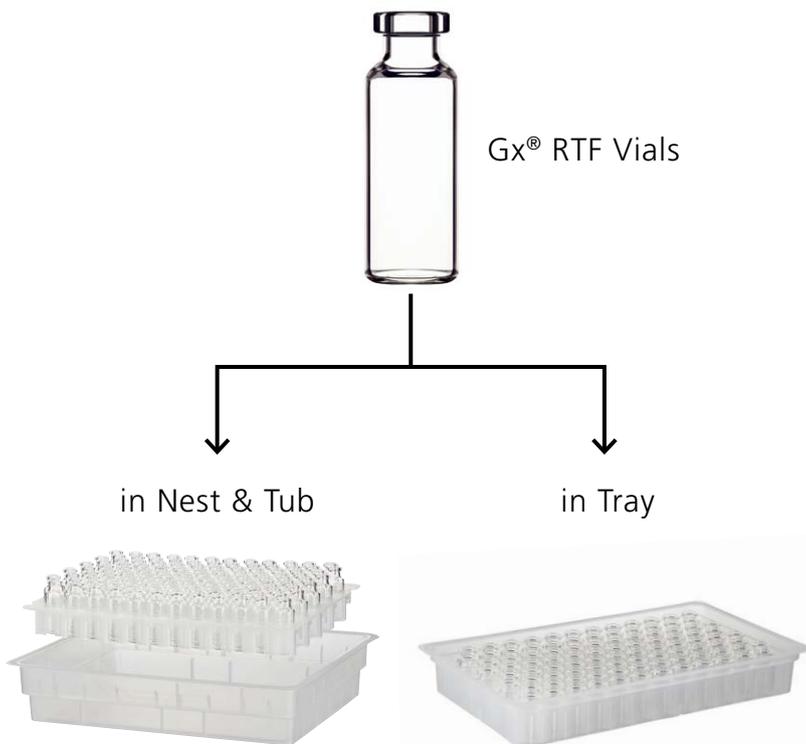


Photo courtesy of Ompi

More information

...about Gx[®] RTF vials powered by Ompi EZ-fill[®]:
www.gerresheimer.com/en/products/pharmaceutical-primary-packaging/vials-sterile-made-of-glass

... about Ompi EZ-fill[®]:
www.ez-fill.com

PRIMARY PACKAGING GLASS

New converting plant opens in Kosamba



The Indian city of Kosamba, not far from Mumbai, is home to one of our container glass factories for pharmaceutical bottles. Our new tubular glass plant for injection vials and ampoules has been built close by and it now boasts fully operational cutting-edge

converting machinery from the U.S. and Europe. Commercial production began in late 2016, targeting all customers looking to purchase pharmaceutical packaging whose quality conforms to the most stringent international standards.

Product offering tubular glass Gerresheimer India

- Vials made from flint or amber borosilicate glass type I
- 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 vial production sites in Europe and the Americas for risk mitigation



The Indian pharmaceutical market

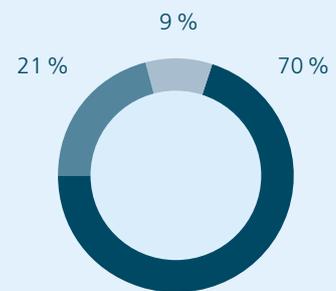
With 70 per cent of market share (in terms of revenues), generic drugs form the largest segment of the Indian pharmaceutical sector. India supply 20 per cent of global generic medicines market exports in terms of volume, making the country the largest provider of generic medicines globally and expected to expand even further in coming years. India's cost of production is significantly lower than that of the US and almost half of that of Europe. It gives a competitive edge to India over others.

The Indian pharmaceuticals market is the third largest in terms of volume and thirteenth largest in terms of value. The Indian pharma industry, which is expected to grow over 15 per cent per annum between 2015 and 2020, will outperform the global pharma industry, which is set to grow at an annual rate of 5 per cent between the same

period. Of late, consolidation has become an important characteristic of the Indian pharmaceutical market as the industry is highly fragmented. The country also has a large pool of scientists and engineers who have the potential to steer the industry ahead to an even higher level. Presently over 80 per cent of the antiretroviral drugs used globally to combat AIDS (Acquired Immuno Deficiency Syndrome) are supplied by Indian pharmaceutical firms.

India's pharmaceutical market is not only strengthened by exports. The domestic market is also growing as a result of increases in salaries, number of elderly people and lifestyle diseases. The market for patented medication is, however, still very small.

The biosimilars market is also an important growth driver. Various biologic patents will expire in the near future. On a competitive



Revenue share of Indian pharmaceutical sub-segments in 2015

- Generic Drugs
- OTC medicines
- Patented drugs

level, Indian pharmaceutical companies might be better positioned compared to other countries due to their expertise in the low-cost manufacturing of generics.

Sources: Quintiles IMS (www.quintilesims.com) / India Brand Equity Foundation (www.ibef.org)

PRIMARY PACKAGING GLASS

Ampoules – a traditional product with a future

A zero-defect production strategy for a demanding market

Ampoules were developed at around the same time as injections were invented as a form of medical treatment. This type of primary packaging allows the pharmaceutical drug to come into contact with only the inert and gas/vapor-impermeable material of glass. Ampoules are also completely tamper-proof. Although ampoules have been competing with vials for quite a while now, and increasingly also with pre-filled syringes, they are still the global number one choice of primary packaging for injectables. Although demand has declined slightly for ampoules in developed nations, this negative trend is offset by clear growth in demand in the cost-sensitive growth markets of emerging nations.



Types of ampoules:
straight-stem, funnel-type and sealed ampoules

Wertheim – Center of Excellence for ampoules

Increasingly stringent quality requirements for ampoules, reflecting developments across the entire medical technology product market, have resulted in quality being a central factor of competition. Innovative and highly sensitive active ingredients, faster filling machine speeds and an increasingly strict regulatory framework mean that ampoules today tend to be developed for specific applications – and precise compliance with specifications is a must. The international Center of Excellence for ampoules at Gerresheimer AG in Wertheim meets these requirements with a consistent “Product by Process” strategy. The plant has over 60 years of experience in ampoule manufacturing and makes regular investments in plant technology and process development so that it can supply highest-quality products to its customers. Around 700 million ampoules are manufactured in Wertheim every year. The plant was established in 1957 as Fritz GmbH. The former family-owned company has been part of the Gerresheimer Group since 1989 and was renamed as Gerresheimer Wertheim GmbH in 2007. The plant’s growth and global development has been supported by the establishment of a comprehensive quality management system. In 1994 it gained ISO 9001 certification, followed by FDA approval for supplies to the USA in 1997. In 2006 it received ISO 15378 certification for compliance with GMP principles in the production of primary packaging materials, and in 2015 it obtained DIN 50001 (EnMS) certification. The Wertheim plant also plays a key role in the Gerresheimer organization’s inter-

national standardization and process optimization efforts. Gerresheimer manufactures more than 2 billion ampoules worldwide every year at five production plants.



Opening systems:
Score Ring, Color Break Ring, One Point Cut

Ampoules – designs and opening systems

Most ampoules are manufactured in accordance with the DIN ISO EN 9187-1/2 standard in straight-stem, funnel-type, and sealed designs. Straight-stem and funnel-type ampoules are supplied open, so the customer has to wash and sterilize them before filling. Sealed ampoules, as the name indicates, are supplied sealed. They are sterile on the inside as a result of the high temperatures in the manufacturing process, which means the customer can open them with a sharp flame, fill them and then re-seal them. All the ampoule types can have various opening systems that make

it easier to break off their tips. Each opening system is associated with specific ergonomic and particulate contamination characteristics. Some ampoules have score rings applied between the body and neck. Others have a color break ring (CBR) burned on that weakens the glass structure at the designated break point. The most popular opening system today is the OPC (one point cut) system, which involves an approximately 2 mm long section of the surface between body and neck being carefully scored. A colored dot on the bulbous part of the ampoule indicates where to apply pressure. When pressure is applied to the dot the top of the ampoule snaps off. It is very easy to control the break on OPC ampoules, and glass particle contamination is very low. Colored coding rings or customer-specific printing can also be applied.

Customized packaging solutions are available for pharmaceutical drugs with challenging requirements. Dimensions and glass quality can be tailored to the specific requirements of the drug itself and to the filling process. For example, the hydrolytic resistance of the glass can be increased by controlling the temperatures when the ampoules are being formed. An additional ammonium sulfate treatment inhibits alkali ion leaching, which is important when the ampoules are being used as a primary packaging for sensitive pharmaceutical formulations. A silicone coating is often applied to the inside surface of the ampoule to make it hydrophobic. This prevents high viscosity products from sticking to the surface and allows the entire content to be emptied out.

PRIMARY PACKAGING GLASS



Manufacturing process

Ampoules are manufactured from thin-walled type I borosilicate glass. High-quality, precise-dimensioned glass tubing with a low incidence of cosmetic defects is essential to the manufacturing of defect-free ampoules. In the first stage of ampoule production, the carousels are filled with glass tubes. In the shaping process, the ampoule is then heated up by gas torches and drawn to shape it from the base to the tip. Then it is separated from the glass tube

and the base of the next ampoule is shaped. The next stage of the production process is the application of code rings, break rings, or the OPC dot and the scoring of the ampoule surface between the body and neck. Sealed-type ampoules have their head shaped by a special tool. The ampoules are then annealed in a furnace at 600° Celsius and their color codes, break rings, or surface printing are burned on.

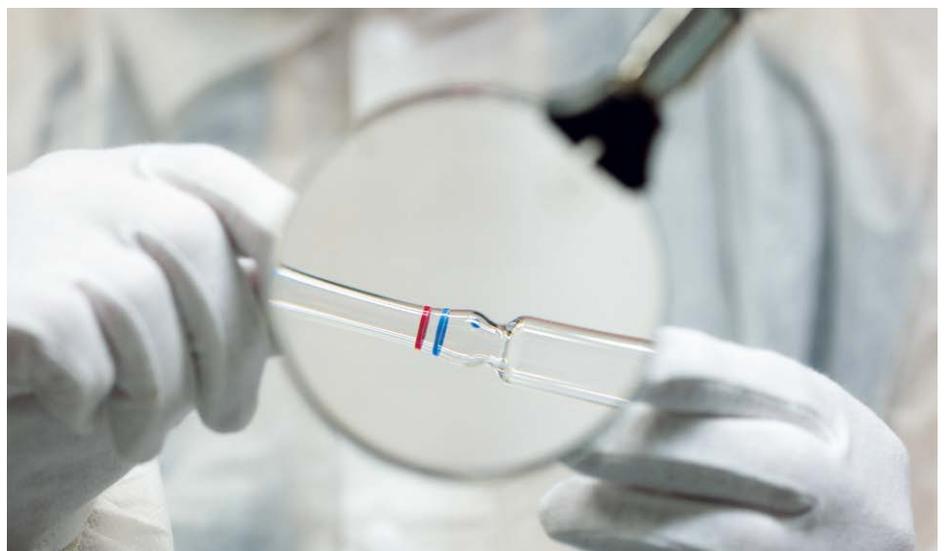
Total quality control

Medical technology products quite rightly have to meet exacting quality requirements. Gerresheimer's uncompromising quality management system ensures that defective products never reach the pharmaceutical companies or, ultimately, the consumers. One of the most important prerequisites for high product quality is highly automated production and inspection processes. The elimination of human intervention in production processes, other than in exceptional circumstances, also eliminates a key source of defects. Laboratory tests involving the destruction of the products are regularly performed on random samples taken from the production lines. They serve to check ampoule break force in the opening process, for instance. The hydrolytic resistance of the ampoule's inside surface is also tested in the lab. Gerresheimer's optimized process control enables it to manufacture ampoules with hydrolytic resistance values that are between 30 and 50% lower than the values stipulated in the ISO standard. The necessary measurements are taken in the laboratory using the traditional titration method, and also by way of flame atomic absorption spectrometry (FAAS). FAAS is the method that customers generally request today.

The majority of quality inspections, including dimensional quality inspections, are one hundred percent inline. Every ampoule that is manufactured is inspected in detail by automated camera systems before the packaging process takes place. They are rotated in front of the camera to ensure that non-conformities and defects can be detected on the ampoules'

entire surface area. Advanced image processing technology not only ensures uncompromising quality, it also improves production process efficiency by substantially reducing the number of false rejects. The inspections cover up to 28 different parameters, including the compliance to specification of all exterior dimensions, the correct positioning of the code rings, the OPC dot, and the break ring. To exclude the risk of the wrong products being filled into the ampoules, an increasing number of customers are insisting on having their own inspection equipment on the production lines to check code ring color combinations. Gerresheimer uses customer-specific camera systems to ensure that color saturation and intensity are in line with customer requirements. The length of the score on OPC ampoules is also checked, because this information can be used to calculate its depth and whether the break force conforms to specification. If the ampoules are printed, the texts have to be checked for legibility, absence of errors, and compliance with customer specifications. Special inline optical character recognition systems are used for this purpose. Automatic cosmetic defect recognition equipment can be found on every single production line.

The Japanese market is particularly stringent about defect-free ampoules without any color splashes or scratches. Also, customer quality inspection systems often reject products with cosmetic defects. For example, if particles or color splashes are created when the ampoule is melted they can be interpreted as burn marks by customer inspection systems. So the early identification of cosmetic defects in the ampoule production process makes the customer filling process more stable with fewer rejects.



PRIMARY PACKAGING GLASS

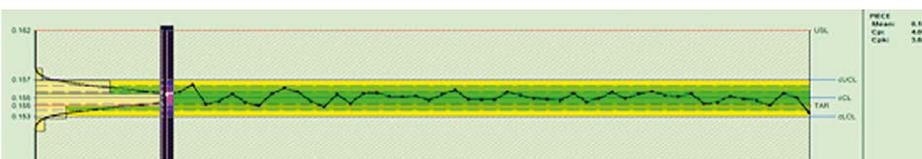


Product by Process

Although one hundred percent product quality inspections provide assurance, they aren't the only important element of the Gerresheimer quality strategy. Gerresheimer aims to control the production process with such a degree of precision that defective products are never even manufactured. This is achieved by shifting the focus from quality control to product and process development. Proof of process capability and therefore supply reliability is becoming an increasingly important supplier selection criterion for pharmaceutical customers in addition to product quality. A defined product quality can only be delivered reliably and sustainably if both the product itself and the effects of material characteristics and process parameters on the product's quality are understood. Design of Experiment (DoE) is an indispensable tool for systematic statistics-based analysis. Obviously, it is impossible to gain any useful information about the production process if the key process parameters are established by trial and error. In DoE, several factors are investigated concurrently and their effects are established in a multivariate analysis. The DoE results can be used to develop a strategy for production process control. The goal is a process window in which the Process Capability Index (Cpk) is higher than 1.33. To reduce variability to the minimum, Gerresheimer has optimized the ampoule production machine controls beyond the manufacturer standard.

In this context, product quality monitoring not only involves rejecting defective products, it also performs the second and equally important function of providing statistical data

for process control that can be used for the real-time optimization of the production process. Ampoules are manufactured on a tool-free basis, so this approach works very well because the final product is completely transparent and therefore optically measurable. Even before the pre-heated glass tube is shaped into ampoules, cameras check its dimensions and precisely adjust the gas torches. Any minute dimensional non-conformities in the glass tube, even if they are just one hundredth of a millimeter in size, are corrected on the basis of the evaluated image data so that they do not affect the dimensional accuracy of the ampoule. This facilitates homogenous ampoule processing and fast, interruption-free customer filling processes. The scoring of the OPC ampoules is acoustically monitored to ensure that any defects are discovered then and there, rather than later on in the dimensional inspection. The regular laboratory testing of production line samples also provides input for statistical process control. The system records and statistically evaluates all the individual break forces. The control chart, Gaussian distribution and capability analysis with Cp and Cpk statistical measurements allow prompt responses to negative trends. The objective is a process that is so stable that hardly any adjustments are necessary. In this kind of process, the products don't just look identical on the outside, they are consistently identical in every respect.



A stable production process remains almost entirely within the defined process limits.

Camera inspection and high-precision recalibration of the ampoule shaping process (see also picture on top of page 5)

Supporting the pharmaceutical industry

The ampoule manufacturer has to supply the pharmaceutical industry with products that optimally satisfy their requirements for a primary packaging for a specific pharmaceutical drug or a specific application. Gerresheimer and the customer select or modify products, sometimes even developing brand new ones, that meet all customer specifications regarding shape, dimensional precision, and primary packaging properties. The product also has to be suitable for reliable filling on fast lines. The quality assurance and process control know-how operating in Wertheim has proven to be so valuable that many customers are now taking advantage of it to optimize their own production processes. In particular, they are reducing rejects by systematically avoiding burnt material when filling sensitive pharmaceutical drug batches, meaning that the ampoule manufacturer not only delivers customer-specific, reliably manufactured products to the customer, but also supports customer filling plant optimization.



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PRIMARY PACKAGING GLASS

Simulation of the glass moulding process with flow analysis software

The first part of the glass production process is the development of the moulds. The more precise the moulds are, the higher the quality of the bottles that are manufactured with them. Perfectly even glass distribution in the mould is crucial to the strength and stability of these highly sensitive products. Gerresheimer achieves this with simulation software that calibrates the production parameters on the basis of CFD (computational fluid dynamics). This improves product quality and reduces development times.

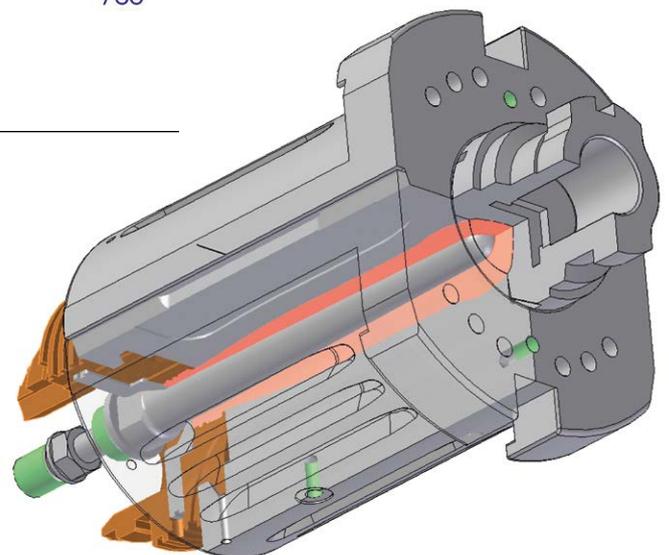


Process simulation result – temperature distribution analysis

“Our customers want lightweight yet stable products,” said Philipp Amrhein, New Product Development & Mould Design Manager at Gerresheimer Lohr. To meet that requirement Gerresheimer uses a simulation software that was especially developed for the moulded glass production process. It optimizes the designs of the moulds and the moulding processes by taking all the chemical and physical parameters of the glass into account.

In the past, lengthy empirical tests were necessary to achieve a stable production process. Today, simulation software performs the same task in a matter of minutes. The results are transferred via interfaces straight into the 3D CAD software for mould design. This mould design data is then quickly made available to the mould-making machines so that the moulds can be manufactured. The simulation software shortens mould development time by up to 70 percent.

A finite element analysis (FEA) is a numerical method of calculating the stresses that the glass container will be exposed to on the basis of the product specifications. The results of the FEA help to eliminate weaknesses even before the product drawings are finished. Computer-aided simulation of the moulding process and product specifications is today an essential aspect of the mould making process. It is also indispensable to Gerresheimer’s continuous improvement process.



3D CAD component for the preform process

PLASTICS & DEVICES

Gerresheimer modernizing its Pfreimd site



Company switching to a more powerful, more energy-efficient technology

Gerresheimer is sparing little expense in bringing cutting-edge technology to the buildings at its German production site in Pfreimd. The first phase of the construction process – renovating the whole of the clean room in Hall 2 – has just been completed, with Halls 1 and 3 to follow. This switch to a more powerful, more energy-efficient technology is being driven by a close partnership between the production and building management teams that has seen construction work finish in just eight weeks.

With Hall 2 last undergoing such a major renovation 14 years ago, an overhaul was a logical step, both for quality reasons and in view of the potential energy-saving measures identified. The rebuilding work involved gutting the entire clean room down to its shell and rebuilding it, fitting state-of-the-art ventilation technology equipped with fan filter units (FFUs). The total investment for this construction stage ran into the low seven-figure range. Oliver Burgel (Global Executive Vice President Operations, Purchasing & Quality, Management Board, Gerresheimer Regensburg GmbH, Regensburg) has been impressed by the sheer speed of the rebuild: “This investment marks a clear commitment to Pfreimd – one of our most important sites. Despite a whole host of obstacles including frost, flooding, and material supply issues, the pro-

ject was accomplished incredibly fast. This couldn’t have been possible without our employees and suppliers working resolutely hand in hand throughout.” One by one, each area of the hall was closed off to production and then renovated over an eight-week period. This meant removing the entire technical infrastructure, including the ventilation, water supply, lighting, and electrics as well as all the walls and ceilings in the space of a fortnight and then completely installing, certifying, and commissioning everything again within six weeks.

Rebuilding work is part of daily life at Gerresheimer’s production sites because virtually every new generation of products in the demanding pharma and medtech market calls for project-specific modifications to the prem-

Hall 2 (assembly line) at Gerresheimer Regensburg GmbH in Pfreimd has been fitted with more powerful, more energy-efficient technology.

ises. When added together, however, these minor construction measures can unsettle the overall manufacturing and technological balance in a building. This is why a major renovation requires all the various uses of a site to be considered separately from individual projects, evaluating technical availability issues and future requirements and bringing them together in an overall concept. Implementing this concept involved radically overhauling over 3,000 square meters of floor space in clean room PU 2 alone and creating a new production area measuring some 400 square meters. The whole of the airlock zone in PU 2 has been redesigned as a clean-room-type air shower and the working areas outside the clean room have been rearranged as well. The rejuvenating treatment handed out to the buildings and their technical systems as well as the coolants used in the chillers now comply with the latest legal requirements, with the new FFU technology ensuring that energy is used much more efficiently. The revamped rooms benefit employees too in the form of more daylight, more space, and less walking to get from A to B.

WORTH A READ

**Innovations for
prefillable syringes****World Pharmaceutical Frontiers,
April 2017, p. 15–16**

The field of prefillable syringes is constantly turning up new developments, driven by new active ingredients and a desire for patient safety at an affordable cost. Gerresheimer explains how it responds to these trends with a series of innovations.

**Innovative glass
production for pharmaceutical
packaging****International Pharmaceutical Industry,
Spring 2017, Vol. 9, p. 80–81.**

Why is glass still the first choice of primary packaging for most pharmaceuticals today and how much high-tech technology do you need to manufacture a glass container that has good filling properties and keeps the content safe? IPI Media director, Anthony Stewart, reports from Gerresheimer's pharmaceutical glass facilities in Lohr and Wertheim, Germany.

**Maintaining high standards
in the pharma sector****Glass International Feb. 2017, p. 26–28**

Health and hygiene standards in the production of bottles for the pharma sector have to be even more stringent than the already high levels in the food and cosmetics sectors. The fully modernized Gerresheimer site in Lohr-am-Main, Germany ensures medicines can be filled and stored safely inside its glass bottles.

**Gerresheimer
bets on ampoules****Emballages Magazine, February 2017**

Gerresheimer has made substantial investments in modern machinery and in automating and standardizing its production processes in recent years, a strategy that has also benefited its Wertheim plant, which has specialized in ampoule manufacturing for over 60 years. The ampoule is the oldest and safest type of disposable glass packaging and its advantage is that it is designed with a single material.

**Modern glassmaking –
specialty glasses for the
healthcare sector****ReinRaumTechnik February 2017, p. 1–3**

Expanding its pharmaceutical range has brought Gerresheimer significant new momentum. The group is well placed to succeed in the current global economic environment with its primary packaging and systems made from specialty glass and plastics for the pharma and cosmetics industries.

Made of glass**Pharmaceutical Manufacturing
and Packing Sourcer, February 2017,
p. 40–41 and online
[www.samedanltd.com/magazine/15/
issue/266/article/4512](http://www.samedanltd.com/magazine/15/issue/266/article/4512)**

PMPS interviews Jens Heymann, Senior Vice President Europe and Asia Tubular Glass about glassmaking and its importance in primary packaging. With plastic coming up as a popular alternative, Jens explains why glass is here to stay.

PEOPLE

**Dr. Christian Fischer to be appointed
CEO of Gerresheimer AG**

Dr. Christian Fischer (53) will join the Management Board as an ordinary member on August 1, 2017 before taking over as Chief Executive Officer on September 1, 2017. Dr. Christian Fischer is currently President, Performance Chemicals, at BASF SE in Ludwigshafen, Germany. Uwe Röhrhoff (54), CEO of Gerresheimer AG, previously announced in November 2015 that he would not be available to serve on the Management Board beyond his current appointment.

“In Dr. Christian Fischer, we have gained an outstanding leader as CEO. He brings with him 24 years of industry experience and has demonstrated his entrepreneurial drive in various roles at BASF, both in Germany and abroad. Over

the past few years, Gerresheimer has refined its strategic focus, made successful acquisitions and divestments, and established numerous operational initiatives – these will ensure a smooth and seamless transition,” explained Dr. Axel Herberg, Chairman of the Supervisory Board of Gerresheimer AG.

“Gerresheimer AG is a highly successful, international company and a trusted partner to the pharma and healthcare industry. I am looking forward to my new role in this exciting company and market,” added Dr. Christian Fischer.

Uwe Röhrhoff will leave the Company on August 31, 2017. Following Dr. Christian Fischer's introduction in August 2017, Uwe Röhrhoff will continue to support his successor in an advisory capacity for a further three months.

Dr. Christian Fischer

Dr. Christian Fischer was born in Furth im Wald, Germany, in 1964. From 1984 to 1988 he studied chemistry at the University of Regensburg, where he gained his doctorate in 1991. He then studied business administration in Mannheim from 1993 to 1996. In 2014, he was appointed an honorary professor at the Technical University of Munich (TUM).

Dr. Fischer has worked at BASF since 1993. Having started his career as a laboratory team leader, he has held various positions at the company, including Deputy Division Manager, Global Marketing Director, Sales Director and Group Vice President in different divisions in Ludwigshafen and Hong Kong. He was President, Advanced Materials & Systems Research and currently serves as President, Performance Chemicals, at BASF SE in Ludwigshafen. Dr. Christian Fischer is married and has one daughter.

PERSONALIEN



Plastics & Devices

Andreas Steuss has been appointed as Senior Plant Director Bünde Medical Systems

Andreas Steuss has been appointed as Senior Plant Director Bünde Medical Systems effective from April 1, 2017. Before joining Gerresheimer Andreas Steuss worked in different functions for the Mann+Hummel Group for 20 years in Germany, Mexico and Brazil. In his last function he held the position of Vice President Operations in Sprockhövel, Germany.



Plastics & Devices

Jens Heckenmüller assumes additional responsibility and has been appointed as Director Commercial Affairs Bünde Medical Systems

Jens Heckenmüller has been appointed as Director Commercial Affairs Bünde Medical Systems, Germany, effective from April 1, 2017. In this function he assumes additional responsibility for IT, Local Purchasing and Material Store.



Plastics & Devices

Jesco Kutschera complements the Plastic Packaging Pharma sales team

As of 16 January 2017 Jesco Kutschera is part of the German speaking Plastic Packaging Pharma sales team. Jesco Kutschera has worked as sales manager for Aptar Pharma for 8 years. He will take over the responsibility from Frederic Laurent for Southern Germany, Switzerland and Austria.



Plastics & Devices

Stephanie Rodriguez back in the Plastic Packaging sales team South/West

Effective from January 1, 2017 Stephanie Rodriguez is part of the Plastic Packaging sales team. She will be responsible for France, Spain, Portugal, Greece and Israel. Stephanie returns back after having worked for Nipro's glass unit. Before that she was part of the Plastic Packaging sales team responsible for Greece and the Middle East.



Primary Packaging Glass

Shaelene Sobczak new Customer Service Manager Moulded Glass America

Shaelene Sobczak has accepted the position of Customer Service Manager, Moulded Glass America, effective February 6, 2017. Shaelene will be based out of the Chicago Heights facility. Shaelene was Inside Sales Manager for Bethlehem Steel/Mittal and most recently held the position of Purchasing Manager at White Lodging Services. Shaelene has extensive experience in building strong business relationships and delivering exemplary customer service. Shaelene completed her education at Indiana University NW. Maria Rodriguez will immediately assume the role of Inside Sales Manager Pharma.

WEB & EVENT

Annual General Meeting approves dividend increase

A dividend of EUR 1.05 per share was approved at the Annual General Meeting of Gerresheimer AG held April 26, 2017 in Duesseldorf. "Gerresheimer has made further strides in the last year and improved its position. Having sharpened our focus on our core business, we have come closer to fulfilling our vision to become the leading global partner for enabling solutions that improve health and well-being. Accordingly, we proposed raising the dividend to EUR 1.05 per share, marking the sixth such increase in a row. The increase was voted through by a large majority at today's Annual General Meeting," said Uwe Röhrhoff, Chief Executive Officer of Gerresheimer AG, summing up at the Annual General Meeting.

At the ensuing Supervisory Board meeting, Dr. Axel Herberg was reelected as Chairman of the Supervisory Board.

The voting results and the speech are available here:

www.gerresheimer.com/en/investor-relations/annual-general-meeting

Annual Report 2016 – On the right track

For what is now the fourth year in a row, we have taken the unconventional step of designing our Annual Report in the style of an exercise book. Following positive feedback in previous years, we have now progressed this concept a stage further. With its green cover and the layout of its image section, which incorporates handwriting, photos, and a great many scribbled drawings, it looks like the kind of notepad that we use every day at work. Large-scale employee photos and profiles help to shed light on some of the key issues that shape what Gerresheimer is doing. As the title of the Annual Report 2016 indicates, we are on the right track.

The Annual Report is available here: www.gerresheimer.com/en/investor-relations/reports or you can request it via e-mail from b.watermann@gerresheimer.com

WEB & EVENT

Gerresheimer named "Top Workplace" again

Gerresheimer has been named one of the top workplaces in Germany again by Focus Magazine. The current Focus Magazine ranking is based on a survey conducted by the Statista market research institute on around 100,000 employers of all ages and across all hierarchical levels in conjunction with data from XING and kununu. The decisive criterion was the employees' willingness to recommend their own employer.



"All good things come in threes, as the saying goes, and we're delighted to have been voted one of the best places to work in Germany again in this year's Focus Magazin survey. Our motivating corporate culture and our targeted personnel development programs have definitely paid off. This tribute certainly encourages us to remain committed to the HR policies we have in place," said Thomas Perlit, Global Senior Vice President Human Resources at Gerresheimer in Düsseldorf.

Iran Health 2017:

Gerresheimer to showcase its primary packaging made from glass



Gerresheimer is exhibiting its products in Iran for the first time, at Iran Health in Tehran. Primary packaging made from amber and clear glass for liquid and solid pharmaceuticals will be taking center stage. As well as being the country's biggest pharmaceutical and healthcare trade fair, Iran Health is also one of the largest industry shows in the Middle East.

"We're delighted to be presenting our products for the first time at this year's Iran Health in Tehran," says Area Sales Manager Mehran Nilchian. Gerresheimer is keen to provide visitors and experts at Iran Health with comprehensive information on its products and services. At this year's trade fair, the company will be focusing on primary packaging made from amber and clear glass and suitable for drugs in solid or liquid form.

For instance, Gerresheimer manufactures injection and infusion bottles as well as tubular-glass injection vials that can hold between 1 and 50 ml. Its other core products include ampoules, cartridges, and more specialty products.

The Gerresheimer 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 employs the latest techniques and monitoring technology from the development stage right through to production and packing for delivery. Some of its plants even have a fully automated system built around packing robots. Gerresheimer uses cutting-edge clean room technology to guarantee optimum cleanliness for its products in terms of particles and germs.

With bases in Europe, Asia, and the Americas, Gerresheimer specializes in manufacturing primary packaging for pharmaceuticals in line with the relevant pharmacopeias. All of its factories are currently certified to standards including ISO 9001 and ISO 15378.

Between May 14 and 17, Gerresheimer's pharmaceutical specialists will be in the "German Pavilion" (B16/b-9) at Iran Health in Tehran, which is being held at the Tehran Permanent Fairground.

GERRESHEIMER

EVENT-CALENDAR 2017

MAY, 14 – 16

Beautyworld Middle East

Dubai, UAE
International Convention and Exhibition Centre

MAY, 14 – 17

Iran Health

Teheran, Iran
Tehran Permanent Fairground

MAY, 16 – 17

Customer Day | Pharma Days Europe

Dresden, Germany
Boleslawiec, Poland

MAY, 23 – 25

FCE Pharma

São Paulo, Brazil
São Paulo Expo

JUNE, 01 – 02

Annual InnoPack Pharma Confex

Mumbai, India
Sahara Star Hotel

JUNE, 13 – 15

MDM East

New York, USA
Jacob K. Javits Convention Center

JUNE, 20 – 22

CPhI China

Shanghai, China
SNIEC | Stand E07

OCTOBER 2017

MedTech China

Shanghai, China
World Expo Exhibition & Convention Center

OCTOBER, 24 – 26

CPhI Worldwide

Frankfurt, Germany
Messe Frankfurt Booth 4.2 D02

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Annual InnoPack Pharma Confex

