

# EZ-fillsmart™

## Making your life easier

New significantly improved RTF platform solution



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innovating for a better life

# New EZ-fill Smart™ packaging platform with significant improvements

Gerresheimer is presenting the new and innovative ready-to-fill vial platform, EZ-fill Smart™, a solution designed to improve drug packaging quality, reduce Total Cost of Ownership (TCO), and shorten lead times for customers. The new EZ-fill Smart™ is an evolution of the standard EZ-fill platform, and it brings new advancements that drive appreciable improvements for customers amid growing demand for ready-to-fill vials.

The EZ-fill Smart™ platform leverages increased automation throughout the manufacturing flow to increase productivity and reduce human errors. The optimized platform features no glass-to-glass and no glass-to-metal contact which improves quality and integrity of the vials throughout the product life cycle.

## De-risking of fill & finish

Risk-free processing and seamless integration into standard fill & finish lines from all major machine vendors  
No glass-to-glass and no glass-to-metal contact

## Sustainability: Reduced CO<sub>2</sub> footprint

Use of biopolymers and re-usable materials, weight reduction, Gx® RTF vials produced with green energy

## Lower particles – improved quality

>90% particle reduction\* creating a new gold standard for the benefit of the patient

\*Verified by internal testing and external certified laboratory

## Alternative sterilization

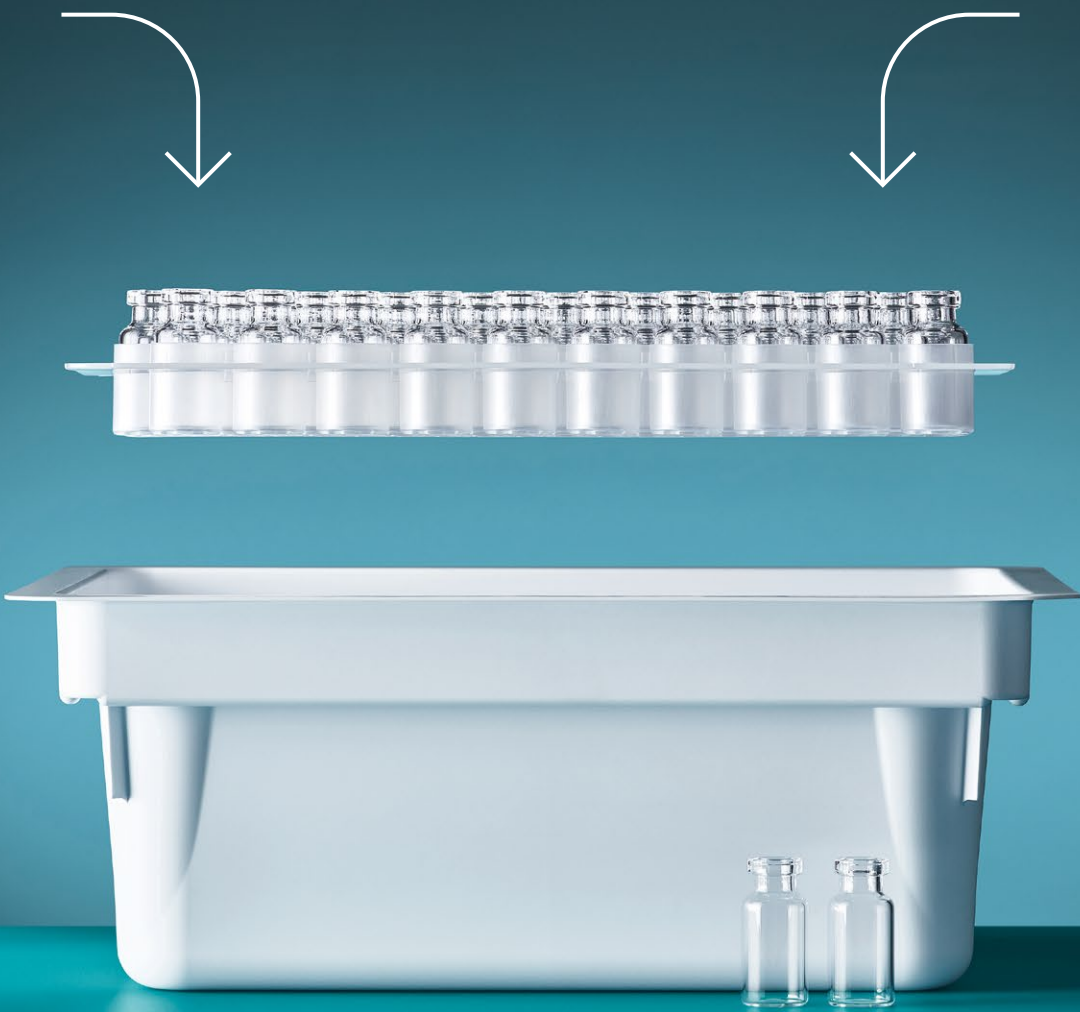
Safe and more environmentally friendly method for sterilization of complete system incorporating guidelines given by regulatory bodies

## Supply chain security

Risk mitigation through like-for-like standard of two leading global manufacturers

## Reduced TCO

Reduced cost and investment driven by smaller machine footprint due to centralized processing of washing/depyrogenization





# EZ-fillsmart™

## System description

The new EZ-fill Smart™ packaging platform comes in one size fits all vials in a nest & tub configuration and will also be available for cartridges in the future. A new transparent polymer film replaces the traditional Tyvek\* lid and allows for convenient cosmetic view of the interior. Thanks to the new polymer film the particle load generated when opening the tub could be reduced by more than 90%. An impressive success that offers patients even more safety when taking and administering their medication.

Along with the nest & tub configuration, EZ-fill Smart™ will also be available in tray configuration to support and accelerate the conversion from bulk to Gx® RTF vials that is already underway in the market.

Component	Material	Properties / Feature
Transparent Polymer Film	Clear PET-PE	<ul style="list-style-type: none"><li>– Contributes to sterility assurance providing hermetic seal to package</li><li>– Easy detachable by peeling mechanisms</li><li>– Minimized particulate load while opening</li><li>– Allows an unprecedented first view of the vials inside</li></ul>
Vial 2R to 20R	Glass Type I	<ul style="list-style-type: none"><li>– Primary container for all types of drugs</li><li>– Other vial sizes on request</li><li>– Clean &amp; sterile – Ready-to-fill</li><li>– Wide range of quality attributes according to chemical and pharmaceutical needs</li></ul>
Nest	Polypropylene	<ul style="list-style-type: none"><li>– Vial holding structure</li><li>– Guarantees no glass-to-glass contact</li><li>– Standardized design for existing fill &amp; finish lines</li></ul>
Fixed Tyvek stripes	HDPE 1073B	<ul style="list-style-type: none"><li>– Permeable barrier for gas penetration, to allow sterilization by several methods</li><li>– Provides hermetic sterility sealing, closure integrity</li><li>– Position aligned with machine supplier to allow easy use with existing fill &amp; finish and handling equipment</li><li>– No removal needed</li></ul>
Tub	Polystyrene	<ul style="list-style-type: none"><li>– Primary product safe environment</li><li>– 3 inch tub for all vial sizes and future cartridges including snap-fit closure solutions</li><li>– Structure and density provider</li><li>– Holds permeable Tyvek barrier for gas sterilization</li></ul>
Boxes	Polypropylene	<ul style="list-style-type: none"><li>– Safeguard packages for handling and transportation</li><li>– Allow for terminal sterilization by EtO (ethylene oxide) or VHP (vaporized hydrogen peroxide)</li></ul>
Sterilization	EtO, VHP	<ul style="list-style-type: none"><li>– Terminal sterility of product to assure SAL</li><li>– Proved sterility according ISO norms</li></ul>







3D explosion for illustration purposes only; dimensions and details may vary

\*Tyvek is a registered trademark of the DuPont company.

# Vial sizes and nest & tub configurations



Below you see the most frequently requested formats and configurations. Other vial formats are available on request. Tray configurations with increased packaging density will be available 2024.

						
Size	Color	Volume	Diameter	Height	Crimp finish	Pcs. per nest
2R	flint	4	16	35	13	100
4R	flint	6	16	45	13	100
6R	flint	10	22	40	20	48
8R	flint	11.5	22	45	20	48
10R	flint	13.5	24	45	20	48
20R	flint	26	30	55	20	24

# Benefits



## Optimized TCO

- Reduced processing costs
- Reduced filling line breakage
- Faster line performance
- Reduced risks of market rejections and recalls
- Minimized investment costs for fill & finish lines by less equipment



## Superior quality

- Significantly reduced particle load due to new polymer film seal
- Fully visible vials due to transparent seal
- Optimized nest design prevents glass-to-glass contact
- Increased patient safety



## Advanced sustainability

- Environmentally friendly new sterilization method
- Use of biopolymers and recycled plastic
- Less material and reduced packaging weight
- Vials manufactured with green energy
- Less scrap due to improved quality



## Increased process efficiency

- Compatible with existing nest filling technologies
- Increased productivity through higher level of automation
- Platform suitable for all batch sizes



## De-risking of fill and finish

- Machinability tested by leading machine vendors
- 3 inch tub for all vial sizes (and in the future also for cartridges)
- No supply chain risk through uniform standard of two leading suppliers
- Meets all worldwide regulatory requirements





## About Gerresheimer

Gerresheimer is the global partner for pharmaceuticals, biotech, healthcare, and cosmetics with a very broad product range for pharmaceutical and cosmetic packaging solutions and drug delivery systems. The company is an innovative solution provider from concept to delivery of the end product. Gerresheimer achieves its ambitious goals through a high level of innovative strength, industrial competence and concentration on quality and customer focus. In developing innovative and sustainable solutions, Gerresheimer relies on a comprehensive international network with numerous innovation and production centers in Europe, America and Asia. Gerresheimer produces close to its customers worldwide with around 11,000 employees and generated annual revenues in 2021 of around EUR 1.5b. With its products and solutions, Gerresheimer plays an essential role in people's health and well-being.

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