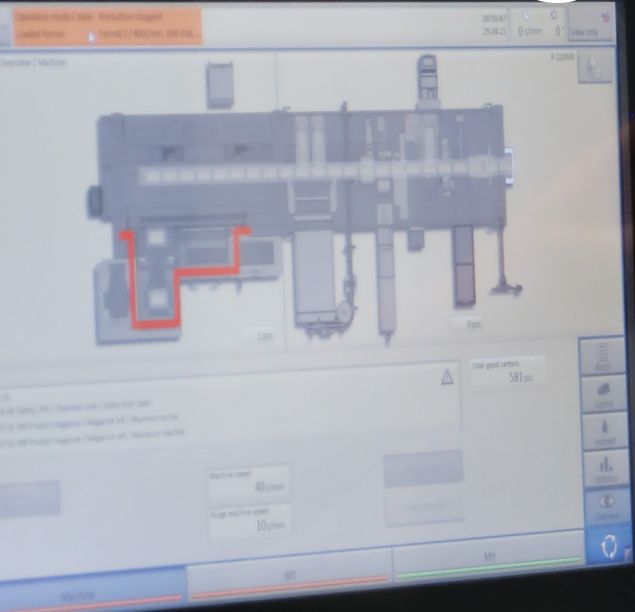


Pharma Packaging

Winged packaging design results in cost savings



Single unit dose nasal sprayer carton for flu vaccine provides a more compact and lower cost alternative to blister packaging

The customer's requirements

Our client wanted to respond to the voice of the end user who was requesting a new unit of sales – Single Unit Dose package. This new package format for a nasal administration live virus flu vaccine needs to be stored at sub-zero temperatures -25 degree C and shipped at - 80 degree C. The costs to maintain the infrastructure to store a product at these temperatures is very expensive.

In addition, the healthcare professionals enjoy a huge benefit with the compact SUD pack design by doubling the product quantity they can keep on-hand to support their patients. Customers also reduce their costs by reducing the number of expensive refrigeration storage systems and shipping containers in half.

The Solution

Our client invested in two Dividella NeoTOP x cartoners to package the Single Unit Dose (USD) nasal sprayer using a 100% recyclable paperboard carton and partition, reducing material cost and dramatically improving environmental sustainability for the product lifecycle. The overlapping dual flap design is an extension of the 5th panel approach for increased printable space.

The customer's benefits

The switch to the new Dividella cartoners allowed the customer to eliminate materials that are not environmentally friendly: Tyvek® and PETG. The new carton designs reduced the carton volume by an estimated 18% for the 10 count carton and 57% for the SUD carton thus allowing to package more doses per pallet load using eco-friendly materials. This also reduces shipping and distribution costs. In addition, the conversion of the packaging format to the Dividella Cartoner system enabled a reduction from formerly seven different booklet specifications to only three - a reduction of more than 20%.





Technical data

The modular machine construction offers the maximum flexibility in the packaging of blisters, ampoules, vials, syringes, injectors and similar products. Fully automated forming and erecting of NeoTOP cartons including integrated partition from flat blanks – up to 45 packs per minute. This is ideal for smaller batches, for example for country-specific packaging.

Thanks to the modular concept, the machine can be expanded at any time. For example, integration of another product inserter or a manual inserting module, etc. The NeoTOP concept is adaptable to accommodate extreme product changes and complex pack arrangements.

up to **45**
packs/min.

Dividella NeoTOPx

Format range	Length x Width x Height (mm)
minimum	60 x 45 x 17
maximum	240 x 170 x 70
No. of partitions	4
Output packs/min.	45

About the customer

Our customer is the worldwide biologics research and development arm of one of the biggest global, innovation-driven biopharmaceutical companies. They focus on the discovery, development and commercialization of small molecule and biologic prescription medicines. Our client is pioneering innovative research and exploring novel pathways across key therapeutic areas, including respiratory, inflammation and autoimmunity.

The new innovative carton design



The package demonstrates an application of a “new idea”

The previous package design for the client’s Single Unit Dose (SUD) nasal sprayer was sized with sufficient billboard space on the exterior of the carton to provide product information for three different languages. The new carton design utilizes two external folding panels (i. e., wings) to provide the space for the same information with a significantly smaller footprint (57% reduction in pack volume).



The package demonstrates a creative use of existing ideas

The use of an extended flap (also known as 5th panel) to increase the printed area has been used in the OTC market for many years. The overlapping dual flap design is an extension of the 5th panel approach for increased printable space. This “wing” design for the SUD carton is an upgrade from the 5th panel, and is the first of its kind in the live vaccine segment.



The package reflects new advances in manufacturing

The replacement of the tamper evident (TE) wafer seal with glued perforation tabs resulted in the removal of a labeler from the packaging process. This lowered the cost and raised the Overall Equipment Effectiveness (OEE). At the same time, the new TE method required rigorous testing of the hot melt adhesive to ensure its capability to withstand the -80 deg C storage temperature.

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57%

reduction in pack volume

Specifications for the tests provide sufficient coverage of the protection requirements for this component

The SUD package incorporates a paperboard partition specifically designed to protect the product during supply chain distribution activities that is glued to the bottom of the carton. The partition is shaped to tightly secure the nasal sprayer in its position so there is no contact with the sides of the carton. In addition, an extended panel prevents the movement of the plunger rod through phase changes, i. e. solid to liquid throughout the cold chain distribution channels. This partition absorbs impact forces to the sprayer and significantly reduces the risk of damage to the container closure. Shock, vibration, and altitude testing have confirmed the robustness of the package design.

The structural design contributes to the image of the product and the shelf impact

The SUD carton with wings design improves the product image by leveraging significant environmental attributes that emphasize reduction of materials, use of biodegradable materials, reductions in cold storage distribution infrastructure. More importantly for our customers, reducing the amount of refrigerated storage space required for our new SUD Carton with wings package format.

The package design improves and contributes to the acceptance of the product

Several surveys were conducted among customers to ensure that the package change would not have a negative impact on them. Some of our customers in Europe were only interested in a single-dose option.

Within one year, our SUD team mastered the customer challenges and was able to deliver a total of more than 70,000 single-dose packs in Germany and Austria. This is now the fastest growing configuration in our flu range with a forecast 5.8 million doses to be delivered by 2022, excluding sales of the current 10-pack format.

The new carton design features two external folding panels to provide the space for the same information with a significantly smaller footprint.

“Dividella NeoTOP x packaging lines are setting production records at our customer’s production site. It is really impressing how well our project team executed the challenging project on schedule and with the expected equipment performance! Each member of our team demonstrated a true sense of ownership and knowledge to ensure total customer satisfaction all along the way to success.”

Christoph Hammer
CEO Körber Pharma Packaging AG

Economics

The package addresses a specific economic concern. The smaller SUD carton with wings design allows us to reduce the size of the package and still maintain enough copy space for artwork to meet strict regulatory text requirements for live vaccines. The implementation of the glued Tear Away Ovals design allows to eliminate the use of a Tamper Evident seal wafer applied by hand to provide product security.

Cost savings

The package design results in cost savings. Cost savings may be demonstrated by one or all of the following:

Distribution Improvements

Warehouse storage reduction in pallet locations for packaging materials by over 40% for new package format design components.

Cold-Chain Storage & Distribution Savings

The reduction in package volume by approximately 50% cuts the number of refrigerated trucks and internal cold-chain storage burden in half. Investment in additional cold-storage capacity was eliminated.

Damage Reduction

The partition design prevents glass breakage and movement of the plunger rod during transportation and cold chain distribution channels. This presents an ideal method of preventing glass breakage and reducing risks to container closure integrity.

Packing/Processing Efficiencies

Packaging process efficiency – Elimination of Tamper Evident seals application improves OEE.

Material Cost Savings

The elimination of the PETG blister trays and Tyvek® lid material result in material unit costs being reduced by over 400%.

Package performance

The package is easily filled, opened, dispensed, reclosed, and stored. The new design allows for easier product insertion and carton closing process in manufacturing. The new design allows for easier opening by the customer. The smaller package allows the customer to store twice as many product units.

It runs on existing packaging machinery. The SUD carton design runs on two new Dividella Neo-TOPx top-load cartoning machines. No customization to Dividella's standard platform is required. The OEE of the NTx machines is 50% higher than that of the thermoformers previously used.

The package offers significant new benefits in handling, storage and warehousing. Ocean shipping containers now hold more than 50% product units due to the package redesign. This eliminated 50% pallet spaces reserved for components and finished products per year in storage and shipping. It also reduces the pallet handling labor in the warehouse. Furthermore, the implementation of a serialization-ready system on the Dividella NTx machines allows for compliance with FDA regulations to support Track and Trace regulatory requirements.

We have you covered, always and everywhere

With local pharma experts around the world we support you wherever your business is located.



About Körber

We are Körber – an international technology group with about 12,000 employees, more than 100 locations worldwide and a common goal: We turn entrepreneurial thinking into customer success and shape technological change. In our five Business Areas Digital, Pharma, Supply Chain, Tissue and Tobacco, we offer products, solutions and services that inspire. We respond quickly to customer needs, we implement ideas seamlessly, and our innovations create added value for our customers. We are increasingly building on ecosystems that solve the challenges of today and tomorrow. Körber AG is the holding company of the [Körber Group](#). We are the home for entrepreneurs – and turn entrepreneurial thinking into success for our customers.

Delivering the difference in pharma

At the Körber Business Area Pharma, we deliver the difference along the entire pharmaceutical value chain by offering a unique portfolio of integrated solutions. Based on in-depth experience spanning consulting, inspection, transport systems, packaging machines and materials, track and trace and software, we understand the challenges in pharmaceutical processes and regulation that our customers face day to day, from the beginning to the end of their production. For them, we deliver the difference to unlock the potential of global pharmaceutical and biotech manufacturing.