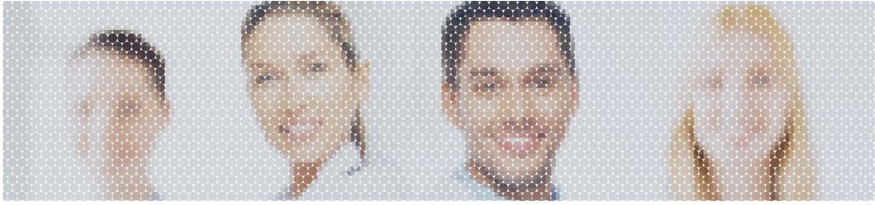
Pharmapan



Single-Use Inhaler

Cost-Efficient, Pre-Filled Inhalation Device

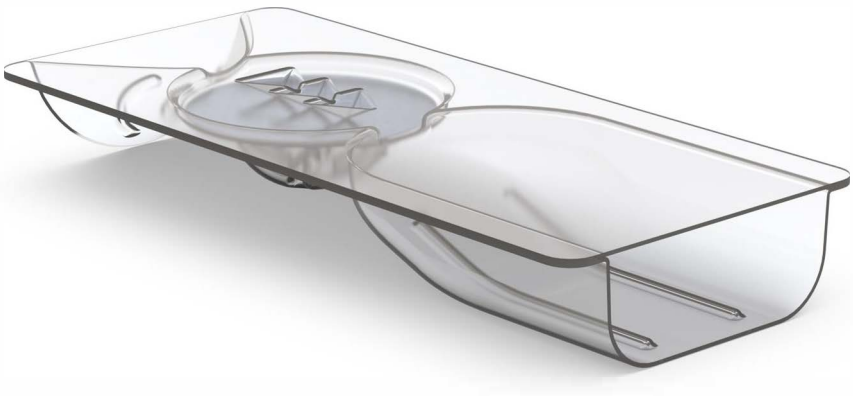
On-demand inhalation with an inexpensive and efficient device.

Inhalers or inhalation devices are widely used to deliver medication to relieve various ailments in the short-term and control them in the long-term. The most popular devices are multi-dose devices, which may not be completely used, and single-dose devices, where the patient inserts a drug into the device when needed. Inhalers are typically rather complex, consisting of several parts with a rather convoluted manufacturing process.

Pharmapan has developed a novel single-use inhaler, which eliminates most of these issues.

This inhaler can be produced and filled in a single manufacturing process, where no additional assembly is needed. The device can easily be modified to meet different requirements. For instance, just by changing one simple format part, the geometric structure – and therefore the airflow in the device – can be adjusted to different powders. Similarly, the size of the storage chamber can be adjusted to the filling volume of the powder.

Operating the device is extremely simple: To perforate the lidding of the storage chamber the patient just presses the lid of the inhaler, then inhales through the mouthpiece. No other action or tool is required. Additional safety measures can be added.to prevent the storage chamber from becoming perforated unintentionally.



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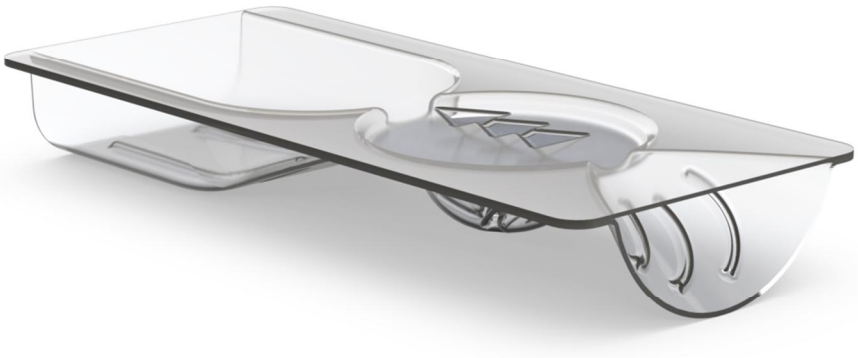
As the blister is typically made of transparent material, the patient can easily check whether he has taken the complete dosage of his medication. If the storage chamber has not been emptied completely, the inhalation process can easily be repeated.

The manufacturing process is based on a standard blister-production process. All films typically used for thermoforming can therefore be used.

The device can be made of relatively inexpensive standard films like PET or PVC as long as the device is packed in a flow-wrap pouch. In this case, the flow-wrap pouch offers a barrier against humidity and light. Moreover, the pouch ensures the inhaler remains clean if carried in a pocket or handbag.

It is also possible to use more sophisticated laminates, which provide a greater barrier against water and/or oxygen, if this is deemed necessary for superior protection. In this case, additional secondary packaging is recommended.



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