

**ecopaCC™**

## Innovative solution for less waste

Sulzer engineers have developed a next-generation primary packaging for adhesive applications: the collapsible ecopaCC™ cartridge. Reducing the amount of packaging material not only results in less waste, it also saves transport and storage costs during the value chain.

Conscious about the ecological challenges to come, Sulzer's Applicator Systems division engineered a next-generation primary packaging for adhesives applications: the ecopaCC cartridge is collapsible and consists of high-tech multilayer foils suitable for various adhesive and sealant materials.



See video about ecopaCC collapsible cartridge.

### How to develop a greener solution

In the adhesives and sealants market, containers cannot be eliminated completely. Sulzer's engineers designed a new packaging system: the ecopaCC collapsible cartridges for two-component adhesives to provide a green solution without sacrificing quality or performance.



Fig. 1 The collapsible cartridge set into a rigid, reusable support sleeve before it is placed in the dispenser.

The most revolutionary feature of ecopaCC is its collapsible structure. The two conventional, rigid, side-by-side tubes of two-component cartridges have been replaced with flexible films. “These film tubes are inserted into a reusable, rigid support sleeve (Fig. 1). Integrated pistons in the support sleeve ensure compatibility with existing two-component dispensers. The rigid support ensures that the system can withstand the extrusion forces,” explains Claudius Reinhold, Head of Product Development Adhesives, Sulzer Mixpac in Haag. “During use, the cartridges compress as the content is dispensed. Once empty, the collapsed, wrinkled foil can be removed and disposed.”

### End users can reduce plastic waste

Customers using ecopaCC cartridges can reduce plastic packaging waste by up to 82% compared to conventional, rigid products. This counts especially in industries such as construction and automotive, that use hundreds of liters of adhesives each week. Disposal costs can be reduced because charges are calculated on a volume or weight basis (see Fig. 2).

In addition, the outlet nozzles of Sulzer’s solution can be resealed. If, after use, the system is not empty, the outlets can be closed to avoid contamination and adhesive hardening. This further minimizes cartridge waste and increases ecopaCC’s green credentials.

### Adhesive manufacturers can reduce CO<sub>2</sub> emissions

Besides end users, adhesive manufacturers can obtain similar benefits by using ecopaCC collapsible cartridges. The packaging features a small distribution and warehouse footprint.

“ We believe in sustainable packaging. With our eco-friendly alternative to conventional packaging, customers reduce their costs across the value chain. Conventional cartridge systems are disposed of once emptied. With ecopaCC, the support sleeve for the cartridge is reusable and thus an important factor behind the ecological concept. The only waste that remains is the collapsed foil and the small front cover. Both take up very little space.

**Amaury de Menthiere**, Division President Applicator Systems

It needs less transport and storage space, resulting in lower freight, transportation and storage costs. Thanks to a reduced transport volume and less weight the related CO<sub>2</sub> emissions are reduced (see Fig. 2). Most savings can be achieved by the adhesive manufacturer when filling ecopaCC from the front because the empty cartridges can then be shipped, distributed and stored in a collapsed state. Only when the adhesive manufacturers fill their product do the films turn into cylindrical structures. Even then, the system is lighter and occupies less volume than conventional cartridges.

When back-filling is preferred by the adhesive manufacturer, ecopaCC is provided as empty, elongated tubes that are not sealed at the back. Therefore, adhesive producers can still benefit from a packaging that has the same lightweight advantage and offers a reduction in overall packaging material volume compared to existing rigid solutions.

### Customized and leakproof cartridges

Cost savings and green practices should not compromise the cartridges' performance and functionality. To avoid any leakage, Sulzer created a high-integrity connection between the front outlets and the high-tech multilayer film using an overmolding injection technology (patent pending). The mixing tip ensures excellent mixing performance and accurate dispensing.

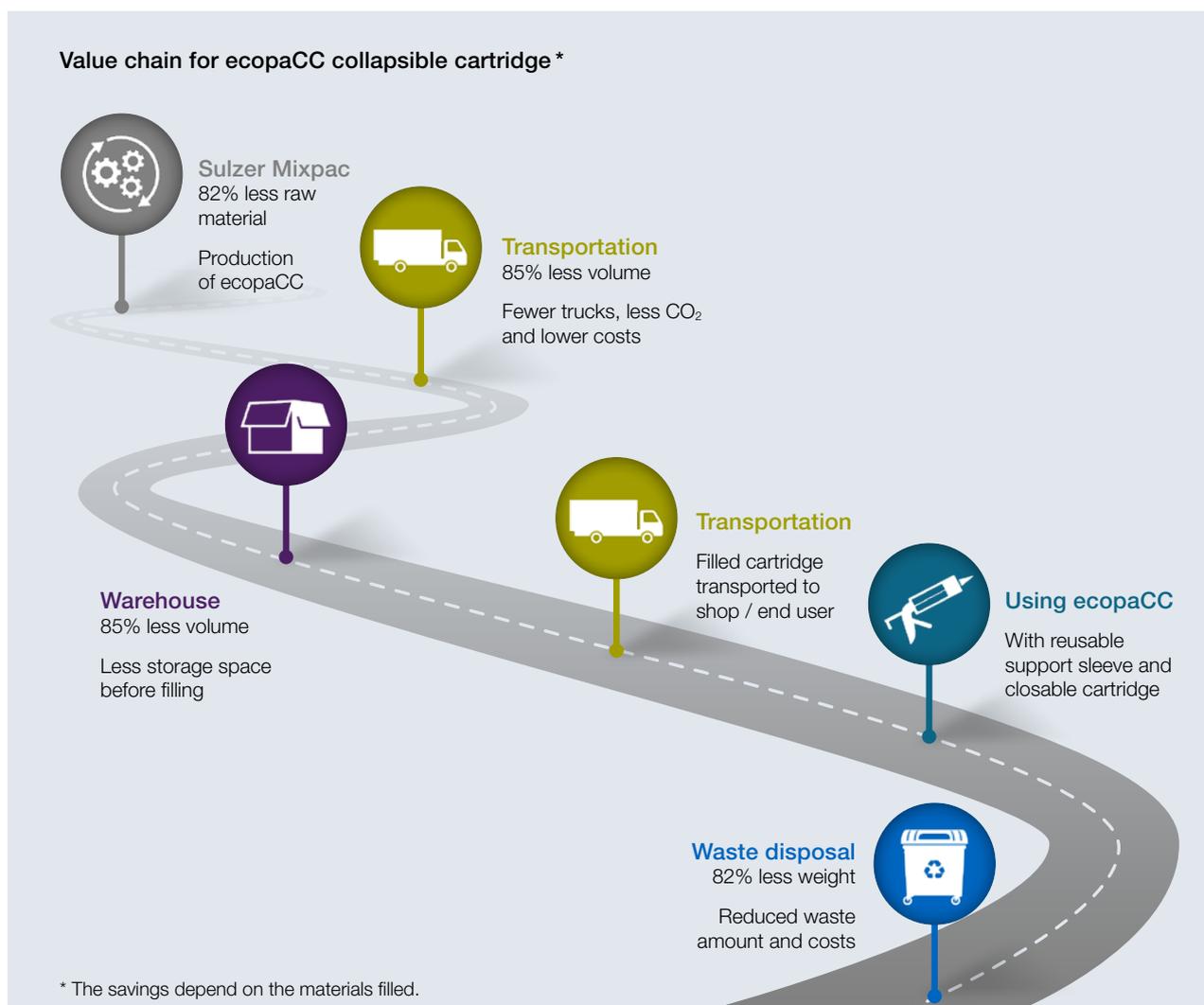


Fig. 2 Savings along the value chain with ecopaCC collapsible cartridges.



Fig. 3 Up to seven high-tech film layers for improved barrier properties and enhanced shelf life.



Fig. 4 The ecopaCC cartridge in use.

The use of films instead of rigid cylinders makes ecopaCC cartridges particularly easy to customize to suit specific applications. For example, longer or shorter foils can be used, making a wide range of filling volumes possible. Different insert materials and a variable number of film layers can also be used, making the cartridges suitable for more demanding adhesive components. Up to seven high-tech films can be used for ecopaCC, according to the requirements of the customers (Fig. 3). Depending on the number of film layers and film material, Sulzer can influence permeability, resp. the oxygen or water vapor amount diffusing into the cartridge filling. Less intruding oxygen is allowing manufacturers to extend and optimize the shelf life of their products.



Christian Majolet,  
Haag, Switzerland

### Go green immediately

During the development of the cartridge, Sulzer was clear that we needed a retrofit solution. This is why ecopaCC cartridges and their supporting sleeves are compatible with a broad variety of existing dispensers. End users can go green without investing in new equipment (Fig. 4).



Tobias Bodenmüller,  
Haag, Switzerland

Flexible packages are becoming an optimal solution as ecological awareness and environmental regulations drive real change in the industry. By choosing a reliable partner like Sulzer with innovative ideas, adhesive manufacturers and users alike can benefit from a more sustainable adhesive packaging and dispensing system. Reliability, durability and cost savings are all carefully built into the end products.

Thanks to Sulzer, end users have now a choice between ecological and rigid packaging solutions. Sulzer has applied for the EU Ecolabel with this new product. This renowned label awards products for their high quality and eco-friendliness.