# MIXPAC™ ecopaCC™ 2-component collapsible cartridge




## FILLING GUIDELINE VERSION 1.1

medmix

INDUSTRY

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# 1 General

## 1.1 SCOPE OF CONTENT

This document is intended as a general guideline for the overall filling process.

The information within provides a solid foundation to achieve high quality results. The guideline is applicable to manual operation as well as automated filling lines but the result of the filling process must in either case be verified by the customer (storage and application).

medmix provides the system. The receiving party is responsible and liable for the usage of the system, the materials applied therewith as well as the compatibility between the system and the filling material.

**NOTE**



In case of system compatibility issues, please do not hesitate to contact your local Sales Representative.

## 1.2 SYSTEM NAME

ecopaCC™

## 1.3 SYSTEM PROVIDER

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Tel.: +41 81 414 70 00
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www.medmix.swiss

## 1.4 TERMINOLOGY

The following terms are used in this filling guideline:

Filling sleeve, piston, ecopaCC, nose plug, multilayer film and retaining ring

## 1.5 SYMBOLS

Please observe the meaning of the following symbols:

| CAUTION |
| --- |
|  **Topic**<br>Please be aware of possible system failure if instructions are not followed. |

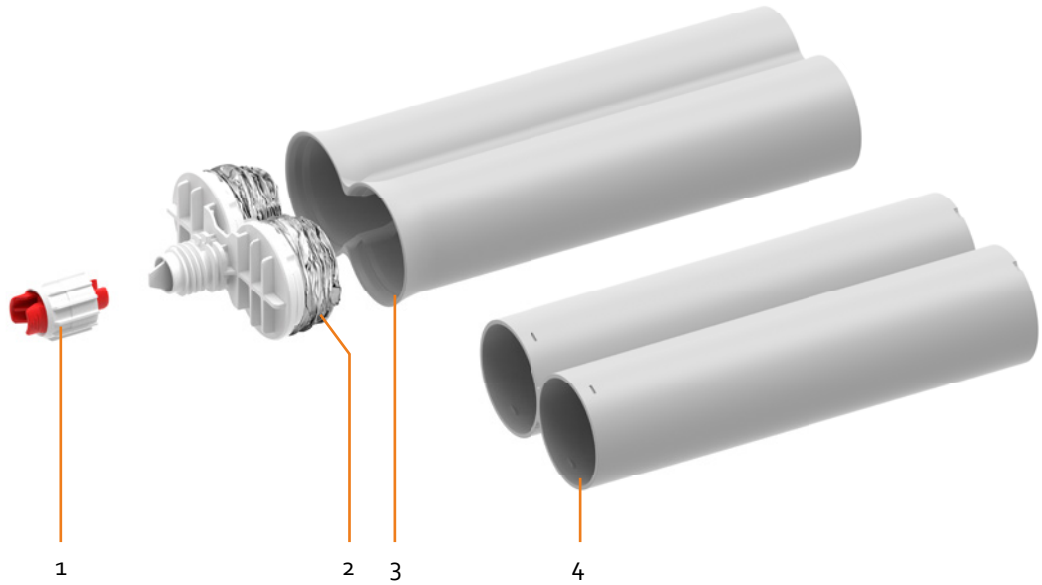
| NOTE |
| --- |
|  Additional information for specific application |

# 2 System Overview

The ecopaCC system consists of a nose plug with retaining ring, collapsible multilayer film cartridge, and a matching support sleeve with preinstalled pistons.

The cartridge system also features:

- Reusable closure
- Side by side outlets
- Full range of available mixers
- Fits into most manual, pneumatic and battery tools designed specifically for Mixpac cartridges.




1) Closure
2) Collapsible, multilayer film cartridge
3) Filling sleeve, pistons preinstalled (used for the filling process without vacuum)
4) Support sleeve, pistons preinstalled (used for dispensing)

**NOTE**

Please refer to the ecopaCC - System product catalogue for detailed information.

# 3 Filling with Vacuum

## 3.1 FILLING PROCESS



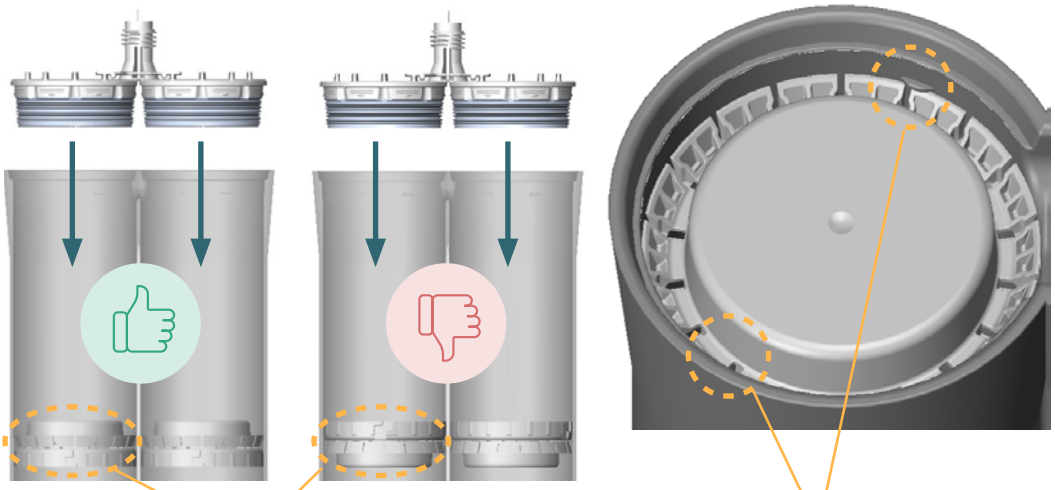
1. 2. 3. 4. 5.

1. Insert the ecopaCC (preferably non collapsed) into the filling machine fixture.
2. Apply vacuum head to evacuate all the air inside the ecopaCC. Once air is completely evacuated, shut the vacuum off. A tight seal must be maintained.
3. Insert filling head while ecopaCC is still under vacuum and begin to fill.
4. Once the ecopaCC is filled to the desired volume, stop filling.
5. Remove filled ecopaCC from the filling machine and install closure.

# 4 Filling without Vacuum

The best results regarding filling quality are achieved, when vacuum is used within the filling process. Nevertheless the section below shows some important factors influencing the filling process.

## 4.1 CORRECT ORIENTATION

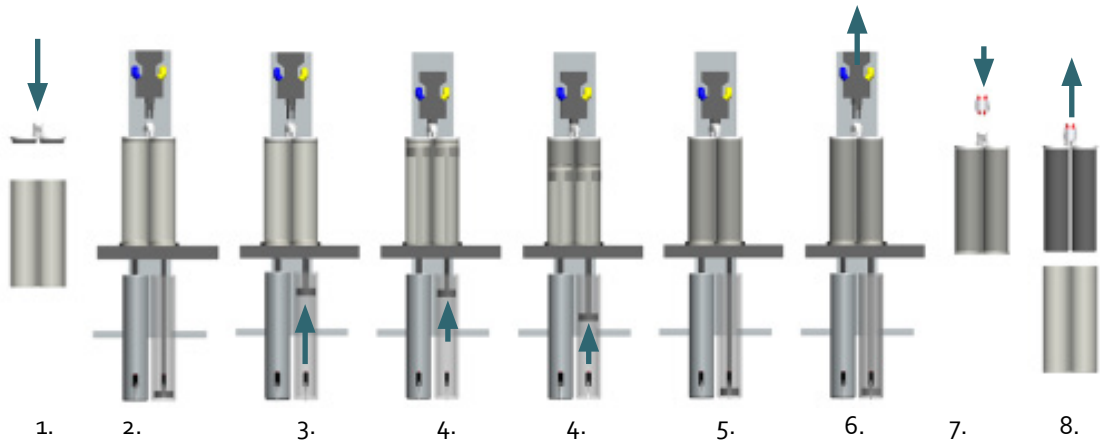


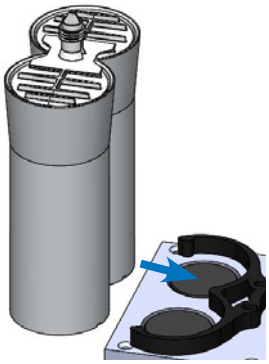

1. Be sure that the ecopaCC is inserted into the filling sleeve with the correct orientation. The pistons need to be facing upwards in the filling sleeve towards the ecopaCC face plate.
2. Using the filling sleeve in the wrong orientation can cause damage to the pistons and or the ecopaCC. With the filling sleeve oriented upside down, the pistons will also be upside down which will result in poor collapsing/filling. There is also a chance the underside of the piston will catch and tear the multilayer film of the ecopaCC.
3. The filling sleeve is designed to keep the pistons installed at all times. As shown in figure 3, located at the top and bottom of the filling sleeve are crimps that physically stop the pistons from escaping out of the filling sleeve. The pistons can be extracted from the filling sleeve by aligning the two crimps at the bottom of the sleeve with the two cut away slots on either side of the piston.

## 4.2 BASIC FILLING PROCESS

**CAUTION**

**Entrapped Air**
Air trapped within the cartridge system can drastically degrade the performance of the adhesive. To minimize the risk of air inclusions, using vacuum within the filling process is highly recommended.



1. Before filling can take place, insert the pre-collapsed ecopaCC into the filling sleeve or equivalent fixture.
2. The filling machine should have an alignment feature to ensure that the filing head is properly inline with the ecopaCC outlet. Place the assembled ecopaCC system into the filling machine.
3. Before the filling process begins the ecopaCC will have the remaining air within the foils evacuated by pre-collapsing it further. This ensures that the ecopaCC is free of as much air as possible. The filling nozzle can now be inserted into the ecopaCC outlet.
4. With the plunger rods in the upwards position and the nozzle in place, filling can begin. It is important to supply enough backpressure to the plunger rods in order to ensure the expanding film is filled uniformly. The backpressure will vary based on the viscosity of the product.
5. A form of limit switch or shot size control should be applied for both A and B side to ensure correct filling volume.
6. When both the A and B side reached the desired volume and the fluid supplies are shut off then the filling nozzle can retract from the ecopaCC outlet.
7. Remove the filled ecopaCC system from the filling machine and install the nose plug.
8. Remove the ecopaCC from the filling sleeve.

**NOTE**

See also separate document
"Multicomponent cartridge system effects on air inclusions"

# 5 Common Filling Problems

Below are some further examples of common filling scenarios that will be encountered in any organization. There are explanations of each scenario and how to possibly rectify and/or avoid the situation as they are not ideal.

**CAUTION**

**Sealing feature integrity**
Damaged or incorrect loading of the ecopaCC might lead to leakage or improper filling during the filling process and storage.

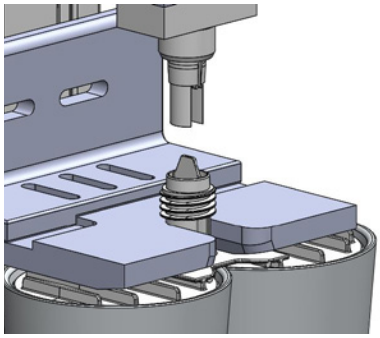


This is a side by side comparison of the filling sleeve and support sleeve.
The filling sleeve (left) has a larger chamfered opening allowing for easier insertion of the ecopaCC.
The support sleeve (right) which is a straight cylinder is used for dispensing the ecopaCC.



The filling sleeve is designed to eliminate any pinching or catching as seen in the pictures on either side which were used with the support sleeve. This may lead to rips/ tears as well as improper filling.



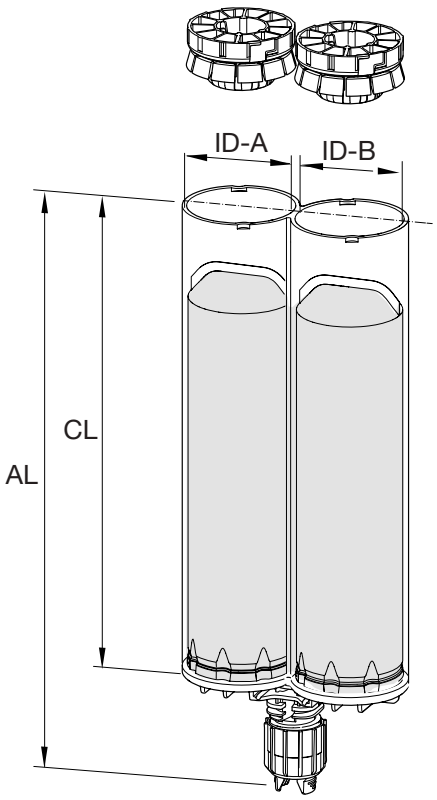


It is important to apply pressure to the face plate of the ecopaCC during the whole filling process.
This ensures that the ecopaCC will stay in place and to avoid any bending around the neck area.
The pre-collapsing and filling steps are the two leading causes for this.



Over filling can cause cross contamination at the outlet of the ecopaCC as well as improper filling.
This will lead to difficulty with nose plug installation.

# 6 Filling Volume




| | |
|---|---|
| Nom Vol | Nominal volume |
| CL | Cartridge length |
| AL | Assembly length |
| ID-A | Inner diameter A-side |
| ID-B | Inner diameter B-side |

| Ratio | Size [mL] | Side | Nom Vol [mL] | Tol [mL] | CL [mm] | AL [mm] | ID [mm] |
|---|---|---|---|---|---|---|---|
| 1:1 | 1500 | A-side | 760 | +/-5 | 217 | 266 | 76.2 |
| | | B-side | 760 | +/-5 | | | 76.2 |
| | 600 | A-side | 280 | +/-5 | 215 | 259 | 46.2 |
| | | B-side | 280 | +/-5 | | | 46.2 |
| 3:1 | 600 | A-side | 380 | +/-5 | 238 | 287 | 52.5 |
| | | B-side | 130 | +/-5 | | | 30.4 |

The dimensional information contained within this table is meant as a guideline. An ecopaCC is preferably tight filled. To avoid overfilling, the ecopaCC fit needs to be checked with the appropriate support sleeve.

# 7 Technical Data

The technical data needed for your cartridge system might differ due to filling material specific needs. Please contact your local sales manager in order to provide you the necessary information for your application.

# 8 Applicable Documents

Multicomponent cartridge system effects of air inclusions.

## DELIVERING INNOVATION. INSPIRING CONFIDENCE.


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