



SAFER & EASIER aseptic filling

Crystal[®] Closed Vial Technology

■ ■ ■ ■ **Vials**



The first Ready-to-fill Closed Vial.

Enables Safer and Easier aseptic filling operations.

Available from 1ml to 50ml.

Philosophy and manufacturing process:

The **Closed Vials** have been developed to cover the most used vial formats in the pharmaceutical industry with capacities of 1 - 2 - 6 - 10 - 20 - 50 ml + overfill.

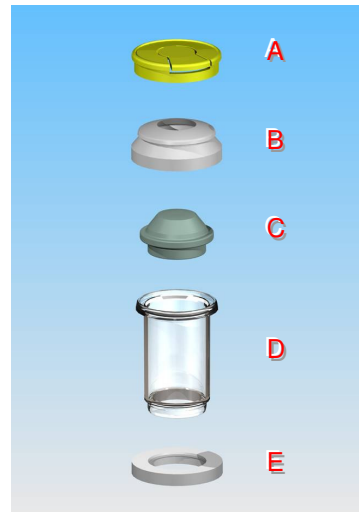
The vials' product contact materials are: COC (Cyclo-Olefin Co-polymer) for the body and a proprietary TPE (Thermo Plastic Elastomer) for the stopper, both meeting Authorities' requirements for pharmaceutical primary container.

The complete manufacturing process is made of four steps:

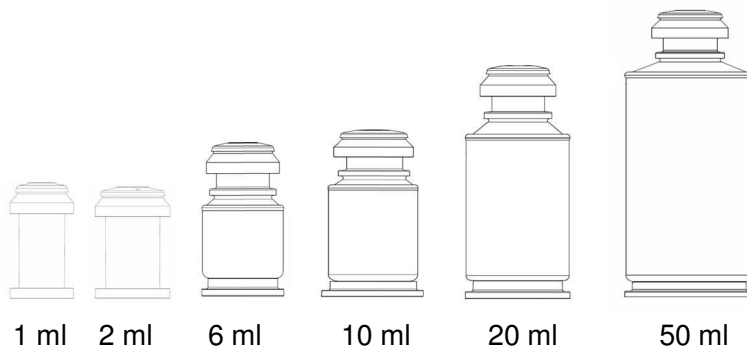
1. Molding of vial body and stopper followed by immediate closing by robots in a Class ISO5 clean room.
2. Final assembly and inspection of closed vial to a Class ISO8 clean room.
3. Packaging in polypropylene boxes and double wrapped in polyethylene bags or in beta-bags.
4. Sterilization by Gamma irradiation at a minimum of 25 kGray.

Vial elements:

- A. Flip-away cap
Ensures tamper evidence and sterility assurance level of the piercing area
- B. Top ring
Ensures closure integrity between stopper and vial body
- C. Stopper
Made of Thermo Plastic Elastomer
Allows laser re-sealing after filling
- D. Vial Body
Made of Cyclo-Olefin Co-polymer
Contains volume from 0.1 to 50 ml
- E. Bottom ring
Ensures mechanical stability



Technical specifications:



CVFL[®] Vials	1 ml	2 ml	6 ml	10 ml	20 ml	50 ml
Height (in mm.)	33.1	33.1	43	53.5	64.7	88.6
Stopper upper diameter (in mm.)	8	9	9	9	9	9
External vial diameter (in mm.)	18.3	22.3	25	25	30	36
Maximum volume filled (in ml.)	1.35	2.25	7.6	11.7	21.8	52.1
Freeze-drying	No	Yes	Yes	Yes	Yes	Yes
Oxygen-free	Yes, every Closed Vial format can be delivered with very low O ₂ content					
Light-sensitive	Yes, every Closed Vial format is available with amber body					
Colored caps	Caps and rings are available in different colors for differentiation					

Aseptic Technologies S.A. reserves the right to make any changes to the described vial characteristics without notice.



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