



CPS Technology Platform

CPS Technology Platform

CPS is a versatile spray pump. It is designed for the multi-dose delivery of preserved or non-preserved drug formulations for the nasal route. CPS can be used for a range of other applications which include intra-nasal vaccination.

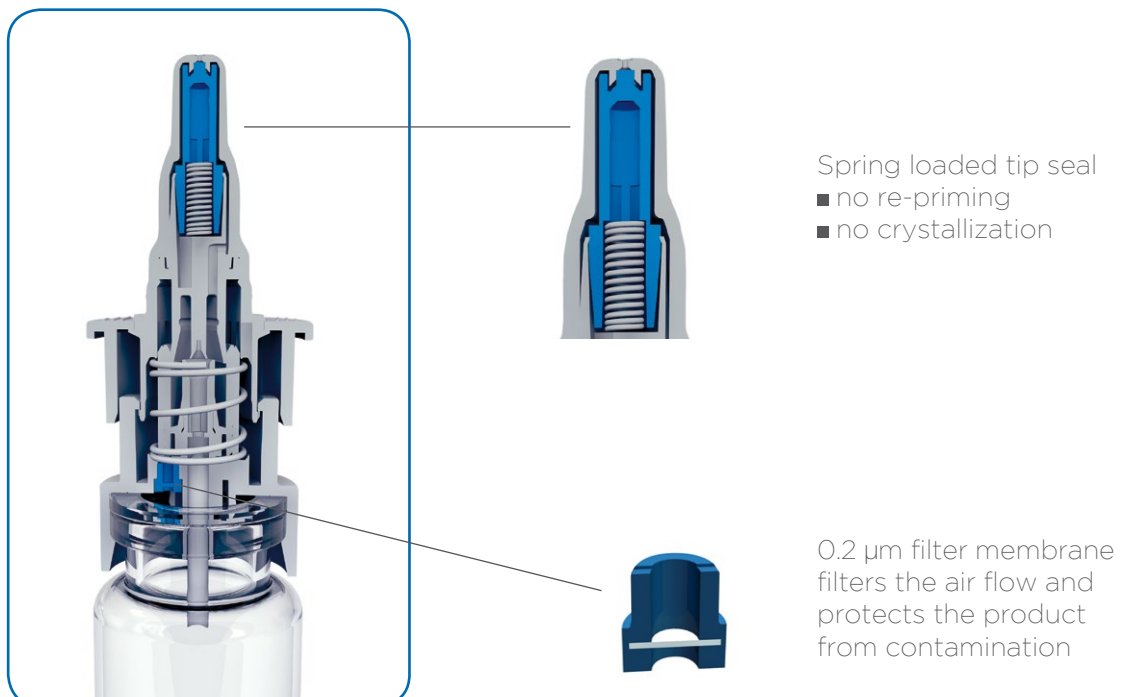
Key Benefits

- Wide range of dose volumes: 50 μ l to 140 μ l
- No re-priming needed even when not used regularly
- Can be sterilized by irradiation
- Gentle alternative to injection for intra-nasal vaccination applications
- One-shot mass vaccination cap available

Key Differentiators

- Anti-clogging tip seal technology to minimize crystallization with high-viscosity and high-volatile formulations
- Proven CPS filter technology avoids entrance of contaminated air into the container
- Fully validated and tested microbiological integrity
- No anti-microbial additives within the pump components
- Metal-free fluid pathway

Air Filtered Preservative Free System



Proven Microbiological Integrity Protects Your Preservative-free Formulation

- Aptar Pharma's Tip-Seal technology has been qualified by microbial challenge tests and has passed relevant worst-case simulation
- Comprehensive data package



TSIT 2.0

(Tip Seal Integrity Test)

Submersed actuation in challenge suspension containing *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Candida albicans*. Reflects most recently updated guidelines in highly regulated markets.



CVIT

(Closure Ventilation Integrity Test)

Closure and filter challenge with *Bacillus atrophaeus* spores in aerosol chamber.

Available Closure Types / Doses

SNAP-ON

DIAMETER	DOSES (µl): 50, 70, 100, 140
20 MM	■

SCREW-ON

DIAMETER	DOSES (µl): 50, 70, 100, 140
18 MM	■

Pump / Actuator / Cap Cross-Reference

	
SNAP-ON	■
SCREW-ON	■
 PROTECTION CAPS	■
 MASS VACCINATION CAP	■
SAFETY CLIP	■

The CPS spray pump is supported by the following associated Services to expedite your drug product development:



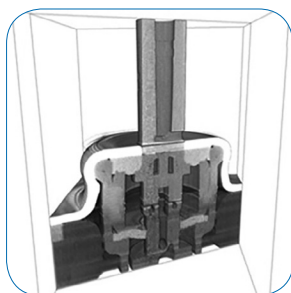
Customized Drug Delivery Solutions

- Specific designs for Rx and OTCs
- Designed and developed by multi-disciplinary project teams with a customer-centric approach
- Quality-by-Design



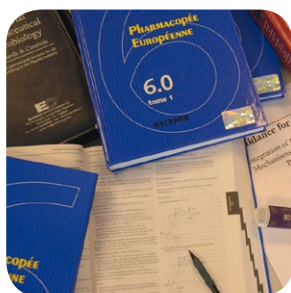
Analytical Laboratories

- Elastomer and plastic extractables, bioburden, silicone oil assay
- Full extractable and toxicology packages to support regulatory filing



Physical Laboratories

- Aerodynamic sizing and spray characterization
- Mechanical, stress and content uniformity testing, moisture content
- Non-destructive 3D tomography imaging
- IV BE Testing
- Fully validated Nasal Casts



Regulatory Expertise

- Dedicated regulatory affairs experts
- 30 DMFs and over 50 pass NDAs and ANDAs generated
- Fast approval data packages



Elastomer Center Research & Development

- Ultra clean, highly inert elastomer gaskets supported by validated testing and manufacturing processes
- Optimization of chemical purity
- Surface treatment for improved gasket inertness