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NASAL SPRAY FINE PARTICLE DOSE MEASURING

To enhance drug deposition in the nasal cavity rather than the lungs, nasal products such as sprays typically produce particles with aerodynamic diameters ranging from 20 to 200 μm . However, up to 5% of particles may have diameters below 10 μm , which can settle in the lower respiratory tract and lungs.

Accurately quantifying the fine particle dose (FPD) produced by nasal sprays is essential. Cascade impactors are commonly used to capture particles within the 0-10 μm range. When paired with a nasal spray expansion chamber, this setup enables precise measurement of fine particle doses in nasal sprays and nasal metered-dose inhalers (MDIs).

APPLICATIONS

- United States Pharmacopeia (USP) <601> – Aerosols, Nasal Sprays, Metered-Dose Inhalers, and Dry Powder Inhalers
- European Pharmacopoeia (Ph. Eur.) 2.9.44 – Nasal Preparations: Particle Size Characterization
- Chinese Pharmacopoeia (ChP) 2020 – Inhalation and Nasal Product Testing

Nasal Spray Fine Particle Dose Measuring

AC Connection with Nasal Spray Expansion Chamber

Nasal Spray Fine Particle Dose Measuring
ACI adapter

Nasal Spray Fine Particle Dose Measuring

Multi-Stage Cascade Impactor Adapter

Accessories

Connect ACI to nasal

Connect ACI to nasal spray expansion chamber to ensure air tightness.

Multi stage cascade impactor adapter

Multi-stage cascade impactor adapter: connect multi-stage cascade impactor to nasal spray expansion chamber to ensure air tightness.

Clamp

Clamp: fast fix nasal spray expansion chamber

Nose Spray Adapter

Nose Spray Adapter

Flow Meter Adapter

Flow Meter Adapter

Bottle Holder
Bottle Holder

Worktable (holder)
Worktable (holder)

Air Pump
Air Pump

Flow Meter
Flow Meter

TECHNICAL SPECIFICATIONS

Optional Expansion Chambers

1. **1L Capacity:** Ideal for nasal MDIs, enhancing drug deposition below the top stage of the impactor.
2. **2L Capacity:** Designed for nasal sprays to optimize nebulization and particle deposition.
3. **5L Capacity:** Suitable for stronger nasal sprays that require additional space to generate a complete plume.

Note: A nasal spray expansion chamber is unnecessary for nasal DPI fine particle dose testing. The testing method aligns with inhaled DPI testing, using identical instruments and accessories without requiring a pre-separator.



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