



TORONTECH



## MULTI-STAGE CASCADE IMPACTOR

Multi-Stage Cascade Impactor designed for precise analysis of aerodynamic properties of inhaled fine particles, this advanced system includes a smart pump, pressure detector, cascade impactor, pre-separator (DPI), artificial larynx, and essential accessories. It meets the instrument qualification standards outlined in USP, Ph. Eur., and ChP 2020 for aerodynamic particle assessment.

## APPLICATIONS

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Multi-Stage Cascade Impactor

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- United States Pharmacopeia (USP) <601> Aerosols, Nasal Sprays, Metered-Dose Inhalers, and Dry Powder Inhalers
- European Pharmacopoeia (Ph. Eur.) 2.9.18: Preparations for Inhalation - Aerodynamic Assessment of Fine Particles
- Chinese Pharmacopoeia (ChP) 2020: Inhalation Product Testing
- ISO 20072: Aerosol Drug Delivery Device - Methods of In Vitro Testing
- ICH Guidelines for Inhalation Product Evaluation

## FEATURES

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1. Contains 7-stage impactors and a micro-orifice collector (MOC). The design allows easy access to collect samples from collection cups and prepare for the next test.
2. Features 8 removable collection cups for effortless cleaning and replacement.

3. Suitable for testing MDI, spray, and nebulizer devices. DPI testing can be conducted with a pre-separator that efficiently removes coarse particles of 10-15 microns.
4. The collection cup serves as the impact surface, placed on a tray directly beneath the nozzles to facilitate sampling.

## TECHNICAL SPECIFICATIONS

| Stage                          | Nozzle Diameter (mm) | Cutting Diameter (µm) |         |         |          |
|--------------------------------|----------------------|-----------------------|---------|---------|----------|
|                                |                      | 15L/min               | 30L/min | 60L/min | 100L/min |
| Stage 1                        | 14.30±0.05           | 14.10                 | 11.76   | 8.06    | 6.12     |
| Stage 2                        | 4.88±0.04            | 8.61                  | 6.40    | 4.46    | 3.42     |
| Stage 3                        | 2.185±0.02           | 5.39                  | 3.99    | 2.82    | 2.18     |
| Stage 4                        | 1.207±0.01           | 3.30                  | 2.30    | 1.66    | 1.31     |
| Stage 5                        | 0.608±0.01           | 2.08                  | 1.36    | 0.94    | 0.72     |
| Stage 6                        | 0.323±0.01           | 1.36                  | 0.83    | 0.55    | 0.40     |
| Stage 7                        | 0.206±0.01           | 0.98                  | 0.54    | 0.34    | 0.24     |
| Micro-orifice collection (MOC) | about 0.070          | 0.70                  | 0.36    | 0.14    | 0.07     |



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