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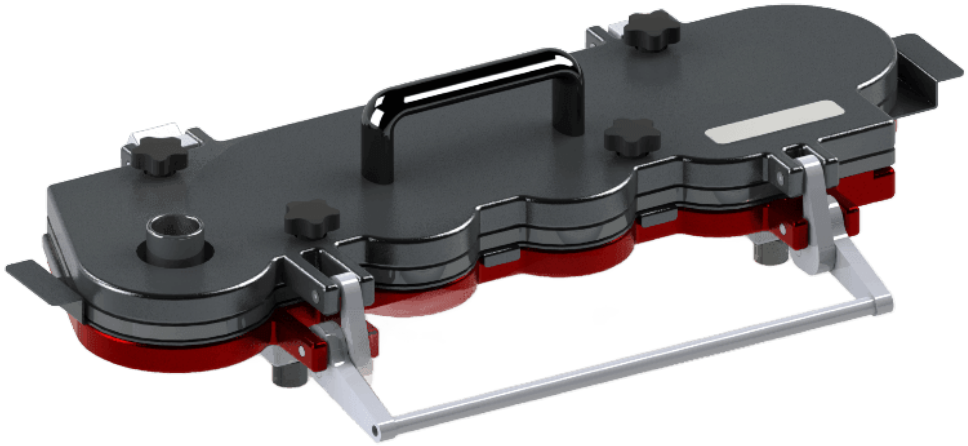

NGI

NEXT GENERATION IMPACTOR

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NGI

NEXT GENERATION IMPACTOR

NGI and induction port

A new cascade impactor has been designed for the OINDP Industry, specifically for pharmaceutical inhaler testing, and is the most efficient and accurate way to do standard in vitro APSD testing.

The Impactor, called the Next Generation Impactor (NGI), has seven stages and is intended to operate at any inlet flow rate between 15 and 100 L/min.

It offers a cut size (D50) spectrum spanning from 0.98 µm to 14.1 µm aerodynamic diameter at 15 L/min, 0.54 µm to 11.7 µm aerodynamic diameter at 30 L/min, 0.34 µm to 8.06 µm at 60 L/min, and 0.24 µm to 6.12 µm at 100 L/min. The impactor's aerodynamics adhere to well-established scientific principles, ensuring reliable particle size fractionation behavior across the designated flow range.

Specifically tailored for inhaler testing, the NGI incorporates features to enhance its utility. Notably, particles are deposited onto collection cups held in a tray that can be swiftly removed as a single unit, facilitating rapid sample turnover when multiple trays are utilized. For efficient drug recovery, users can introduce approximately 40 mL of a suitable solvent directly into the cups. Another distinctive feature is the micro-orifice collector (MOC), which captures extremely small particles, usually collected on the final filter in other impactors, in a dedicated collection cup.

The particles gathered in the MOC cup can be analyzed in the same manner as those collected in other impactor stage cups. With its user-friendly attributes and adherence to aerodynamic design principles, the NGI proves to be a well-suited impactor for the requirements of the inhaler testing community.

NGI Features & Benefits

- Compliant with USP guidance.
- Features an 8-stage collection system, comprising 7 stages along with a Micro-Orifice Collector (MOC).
- Offers precise cut points for accurate particle size determination.
- Abundance of accessories designed to enhance testing efficiency.
- Conducts in vitro Aerodynamic Particle Size Distribution (APSD) testing contrary to Standard Andersen Cascade Impactor 8 Stages.
- Exhibits corrosion and chemical resistance for robust durability.
- Extended equipment life for prolonged and reliable usage.
- Incorporates a Micro-Orifice Collector (MOC) for the collection of exceptionally small particles, adding a unique dimension to particle analysis capabilities.

NGI inner part (cups and nozzles)

Cut-off diameters (µm) for Next Generation Impactor with and without Pre-separator at 15, 30, 60 and 100 L/min:

Stage	Flow Rate (15 L/min)	Flow Rate (30 L/min)	Flow Rate (60 L/min)	Flow Rate (100 L/min)
1	14.1	11.72	8.06	6.12
2	8.61	6.40	4.46	3.42
3	5.39	3.99	2.82	2.18
4	3.30	2.30	1.66	1.31
5	2.08	1.36	0.94	0.72
6	1.36	0.83	0.55	0.40
7	0.98	0.54	0.34	0.24
MOC*	-	0.36	0.14	0.07

*MOC, micro-orifice collector. Sizes correspond to 80% collection efficiency for this back-up stage.

The impactor configuration features easily detachable impaction cups arranged in a single plane. It comprises four primary sections: the cup tray which houses eight collection cups that gather samples before analysis, the bottom frame which provides support for the cup tray , the seal body accommodating the nozzles, and the lid containing interstage passageways.

As mentioned before, the apparatus incorporates a terminal Micro-Orifice Collector (MOC), potentially obviating the need for a final filter, subject to validation during method verification. The MOC, consisting of an impactor nozzle plate and collection cup, boasts approximately 4032 holes, each approximately 70 µm in diameter.

NGI Final stages

Main characteristics and materials:

Weight (kg)	18
Stages	7 + MOC (internal filter, external filter, induction port and pre-separator are not included)
Calibrated flow rate	15 L/min - 100 L/min
Lid	Anodized Aluminum
Seal body	Anodized Aluminum
Nozzles	Stainless Steel
Cups	Stainless Steel (2 large, 6 small)
Bottom Frame	Anodized Aluminum

Product Codes

Next Generation Impactor (NGI)	AC99-122-0900SP
NGI Induction Port	AC99-122-0901SP
NGI Preseparator	AC99-122-0902SP
NGI Internal Filter Holder	AC99-122-0903SP
NGI External Filter Holder	AC99-122-0904SP
CUP Rack for NGI	AC99-122-0905SP
Washing Rack for NGI	AC99-122-0906SP
O-ring Kit for NGI	AC99-122-0907SP
Hard-shell Case for NGI with Wheels	AC99-122-0908SP

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