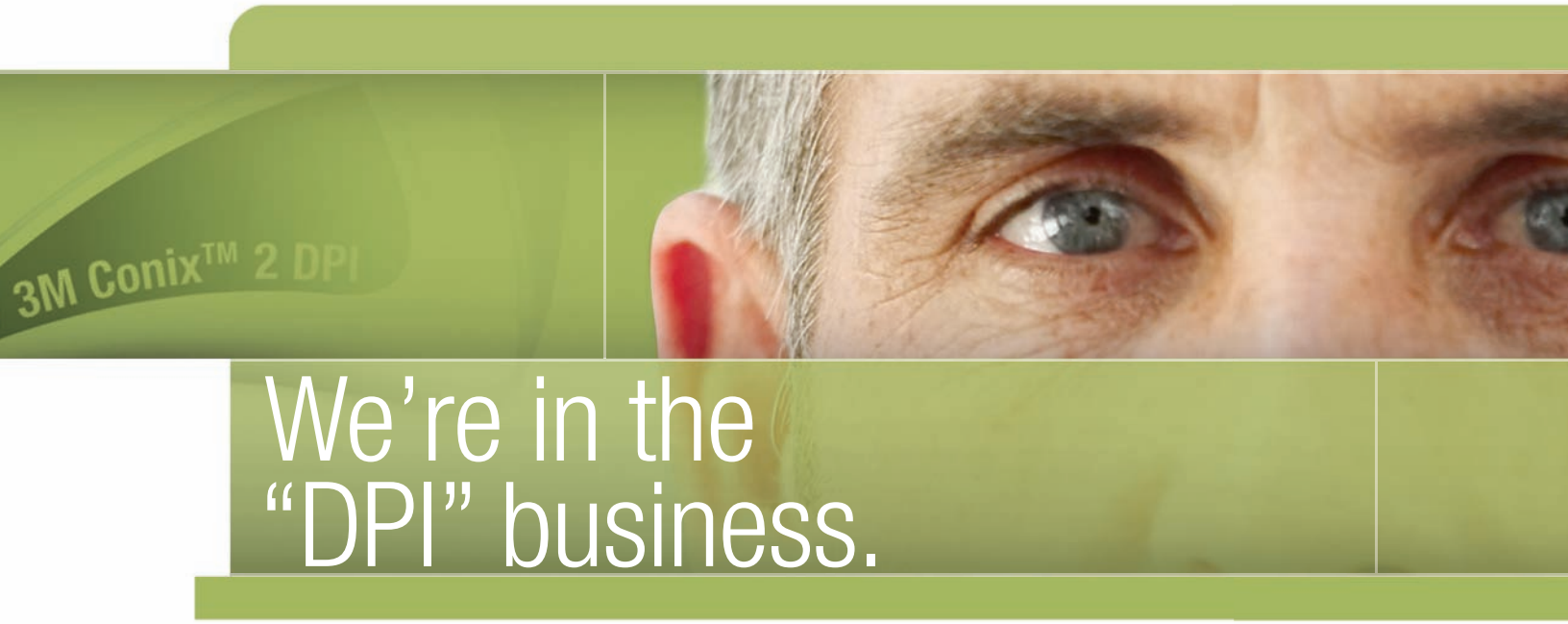
3M Drug Delivery Systems

INHALATION SYSTEMS



We're in the "DPI" business.

We're expanding our inhalation portfolio to increase your opportunity for success.

Cutting-edge reverse-flow cyclone technology can be incorporated into a variety of designs.

The 3M Conix™ Dry Powder Inhaler (DPI) is a novel technology that combines effective drug delivery with simple operation. The innovative reverse-flow cyclone design offers multiple benefits:

- Can be developed in disposable, reloadable and multi-dose formats
- Provides protection from moisture ingress
- Can be used for single or combination drugs
- Delivers up to 1.5 mg API

The 3M Conix DPI is suitable for a variety of applications, including mass immunizations and vaccinations as well as the treatment of asthma, COPD and seasonal allergies. Contact the experts at 3M to help you determine whether a DPI is the best fit for your molecule and market needs.

US: 1 800 643 8086
UK: +44 (0) 1509 613626
www.3M.com/conix

ENABLING YOUR SUCCESS.

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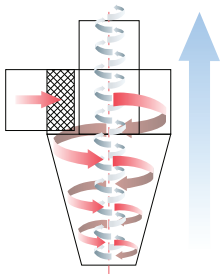
3M Conix DPI with Reverse-Flow Cyclone Design

Utilizes reverse-cyclone technology to increase delivery effectiveness:

- Deagglomerates and aerosolizes particles
- Respirable particles emitted from device

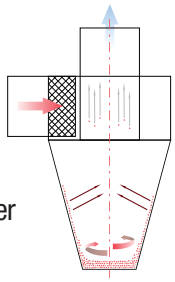
How it works:

- API/lactose blend is sealed in a cone shaped chamber
- Action of device driven by user's breath

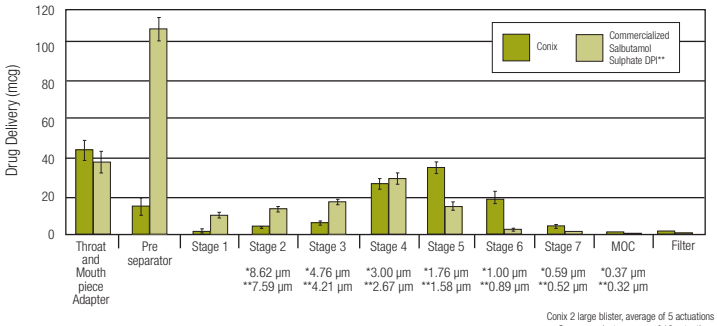


- As air is drawn into the cyclone chamber, a vortex is established
- Upon reaching the bottom of the chamber, the airflow reverses and travels up through the circular outlet

- As air is drawn through the cyclone, swirling airflow selectively separates and releases the fine particles (API) from the larger particles (lactose)
- Micronized API particles are carried toward the central reverse vortex through the outlet
- Larger lactose particles remain in the chamber



Particle Size Distribution (NGI)



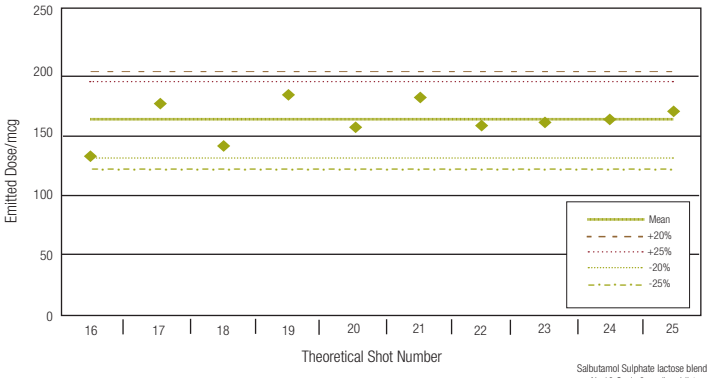
Conix 2 large blister, average of 5 actuations
Comm. product: average of 10 actuations
Salbutamol Sulphate lactose blend

Conix delivers more drug particles in respirable range, fewer in non-respirable range.

3M Conix DPI Delivers Uniform Dosing

Conix technology improved the delivery performance of this commercial DPI formulation, increasing delivery of respirable dose particles and decreasing delivery of non-respirable dose particles.

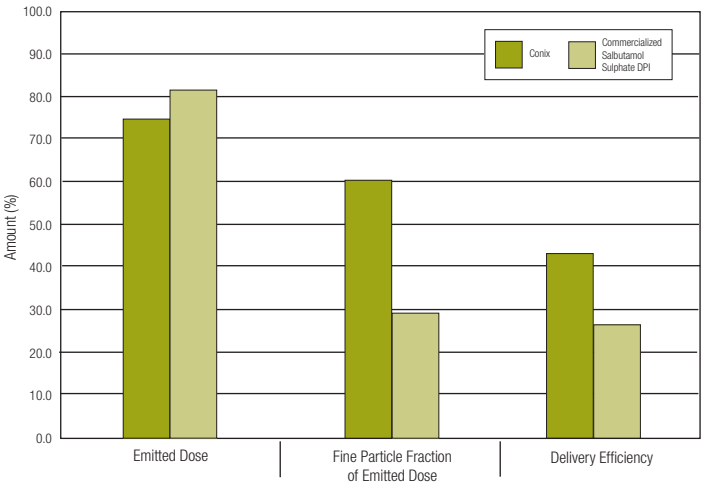
Dose Content Uniformity



Salbutamol Sulphate lactose blend
N=10 Conix 2 medium blisters
Single device used for all blisters

Conix data aligns with FDA guidelines for DCU.

Comparison of Device Performance



Conix 2 large blister, average of 5 actuations
Comm. product: average of 10 actuations
Salbutamol Sulphate lactose blend

Conix selectively delivers more dose to the lungs, improving efficiency and minimizing drug waste.

3M

Drug Delivery Systems

3M Center, building 275-03-E-10
St. Paul, MN 55144-1000
USA
1 800 643-8086
FAX 651 737-5265
3M.com/conix

Drug Delivery Systems

3M House, Morley Street,
Loughborough, Leicestershire,
LE11 1EP England
+44 (0) 1509 613626
FAX +44 (0) 1509 613099
3M.com/conix

Drug Delivery Systems

33-1, Tamagawadai 2-chrome
Setagaya-ku, Tokyo
158-8583 Japan
(81)3-3709-9671
FAX (81)3-3709-8754
3M.com/conix

Drug Delivery Systems

3M Innovation Singapore Pte Ltd
1 Yishun Avenue 7
Singapore 768923
(65) 6450 8888
FAX (65) 6552 2113
3M.com/conix

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