



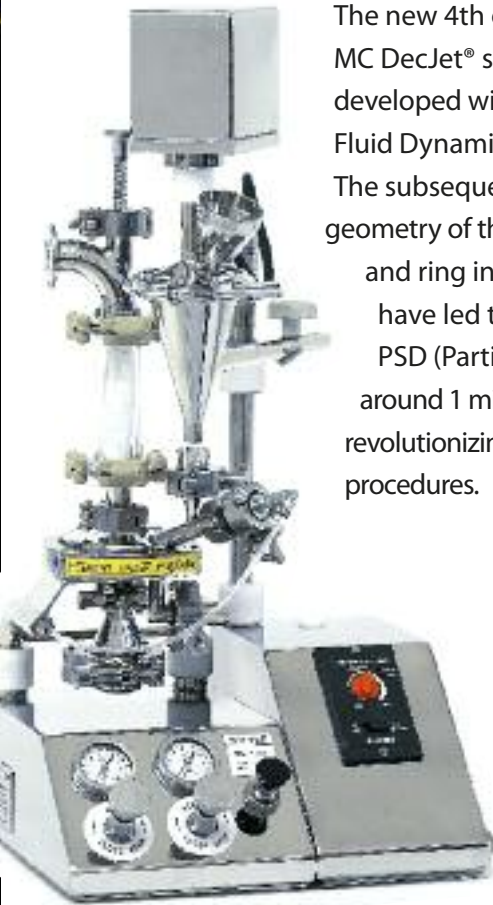
Pharmaceutical and Chemical Powder Micronization

Micronization at its Finest

With the 4th Generation
MC DecJet® spiral jet mill range

Pharmaceutical ingredients in powder form often need to be reduced into the microscale size range in order to achieve their best effects. Common pitfalls of cleaning issues, heat generation and high particle lower size limits (40 microns) when using mechanical mills can be controlled with Dec's MC DecJet® range of fluid energy mills.

Dec is considered a pioneer in the field of spiral jet milling. The development of jet milling technology, ie particle size reduction by collision, dates back to the 1960s followed by continuous development over the decades leading to today's high performance 4th generation jet mills serving many industries, notably in the pharmaceutical and chemical sector.



The new 4th generation MC DecJet® systems has been developed with Computational Fluid Dynamics (CFD) analysis. The subsequently improved geometry of the grinding chambers and ring integrated nozzles have led to a very narrow PSD (Particle Size Distribution) around 1 micron (Gaussian curve) revolutionizing existing micronizing procedures.

Award winning MC DecJet® 30 – the smallest jetmill available on the market for R&D applications

In-House Testing Capability

Our extensive in house testing facility allows us to test both non-toxic compounds with our standard open range of jet mill systems and now highly toxic compounds using our state of the art high containment micronizing isolation system with fully automated control, gravimetric feeding and dedicated air handling system capable of achieving specific temperatures and relative humidity requirements.

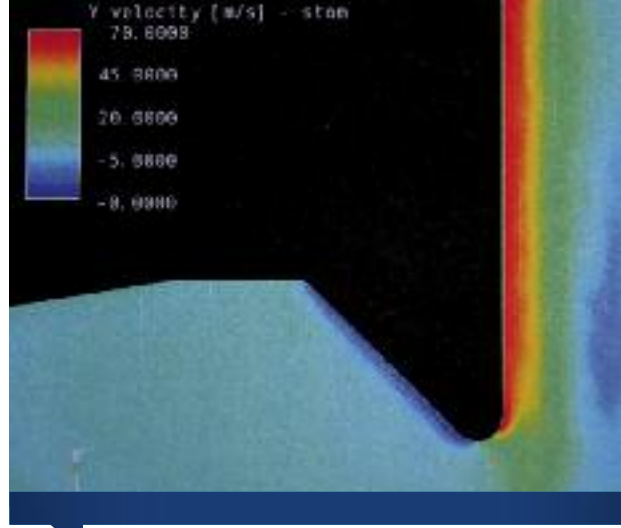
Micronizing Isolators

MC DecJet® isolators provide full containment of highly active and/or sterile compounds with both operator and product protection. The MC DecJet® micronizing and containment range (from MC DecJet® 30 to 400) is the perfect union of years of experience as user and provider of micronizing and containment technologies.

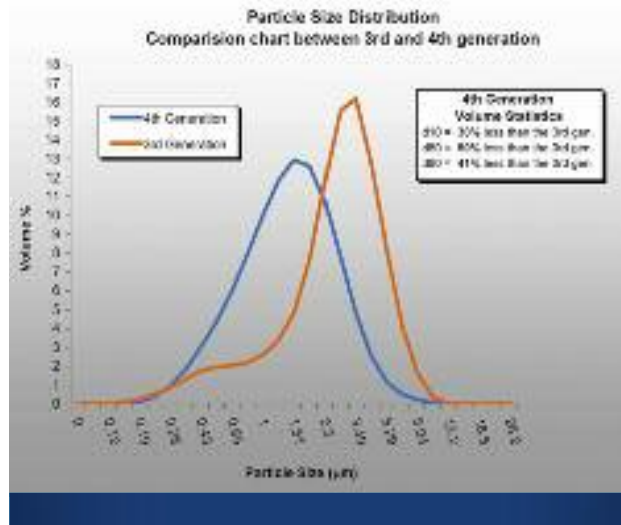


MC DecJet® 200 Half suit isolator

Engineering the 4th Generation



Dec's 4th generation jet mills, re-designed from the ground up using "Smoothflow Jet Technology" - Jet milling technology re-engineered, re-worked and re-invented.



The design team developed and built new micronizing equipment to deal with the most difficult products from sticky to hard and from brittle to soft, while minimizing blow back and product build up which includes the use of alternative materials.

High Performance and Excellent Scalability

Our ergonomic range of the MC DecJet® models offer excellent scalability from R&D to large-scale production units.



MC DecJet® 30



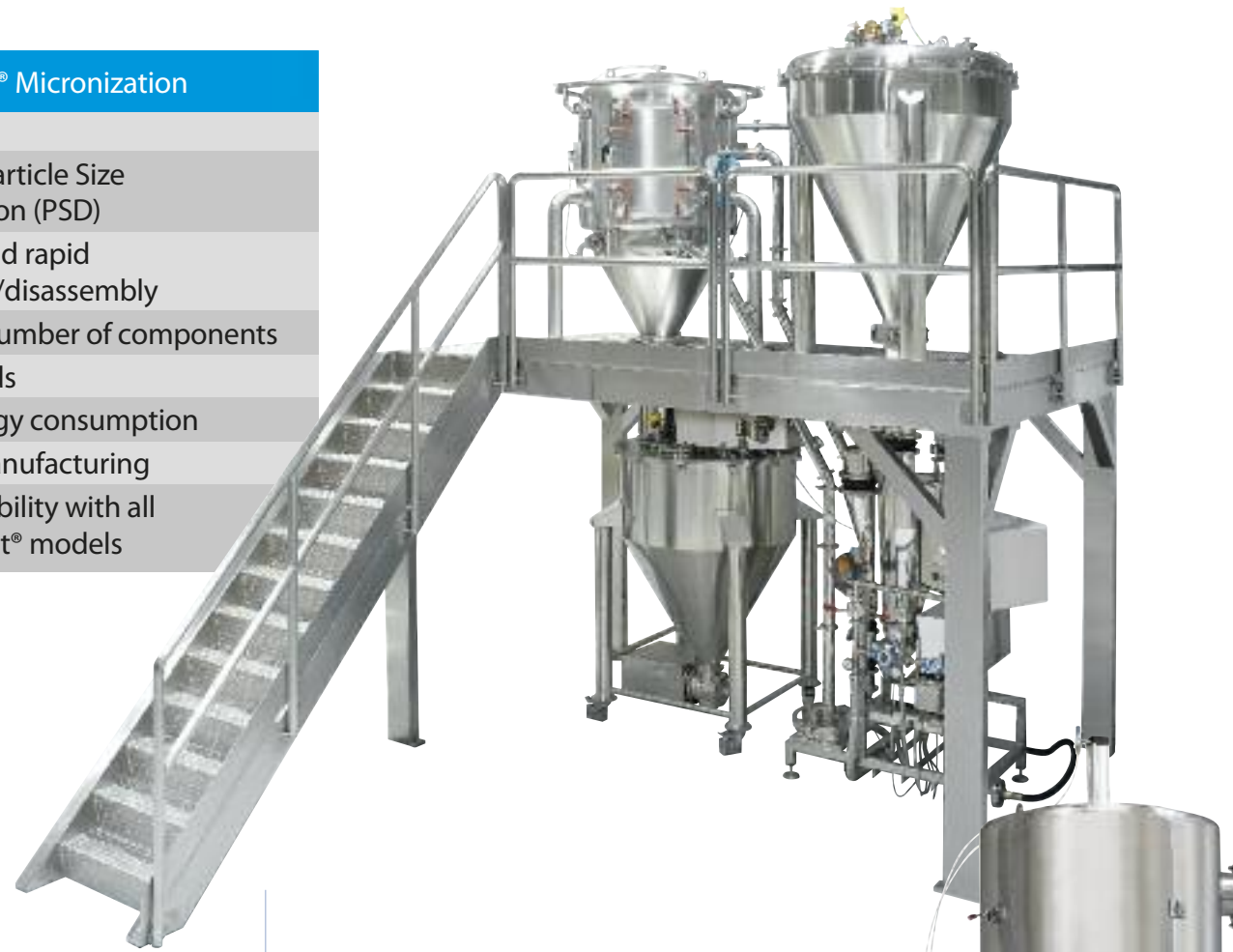
MC DecJet® 50



MC DecJet® 100



MC DecJet® 150



MC DecJet® 200



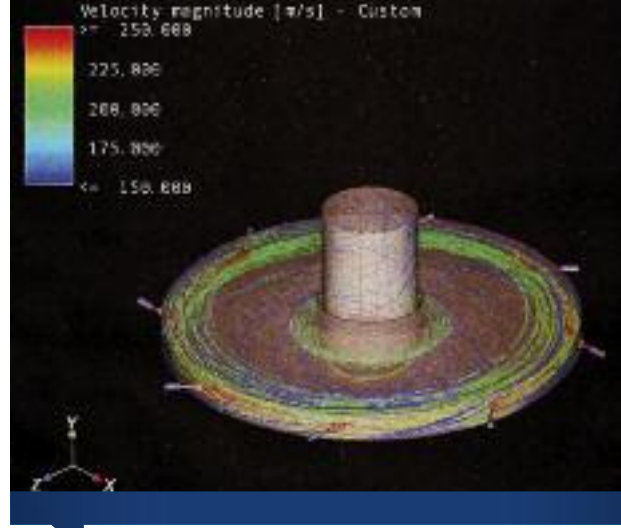
MC DecJet® 300



MC DecJet® 400

MC DecJet® Micronization

- Narrow Particle Size Distribution (PSD)
- Simple and rapid assembly/disassembly
- Limited number of components
- High yields
- Low energy consumption
- Sterile manufacturing
- PSD scalability with all MC DecJet® models



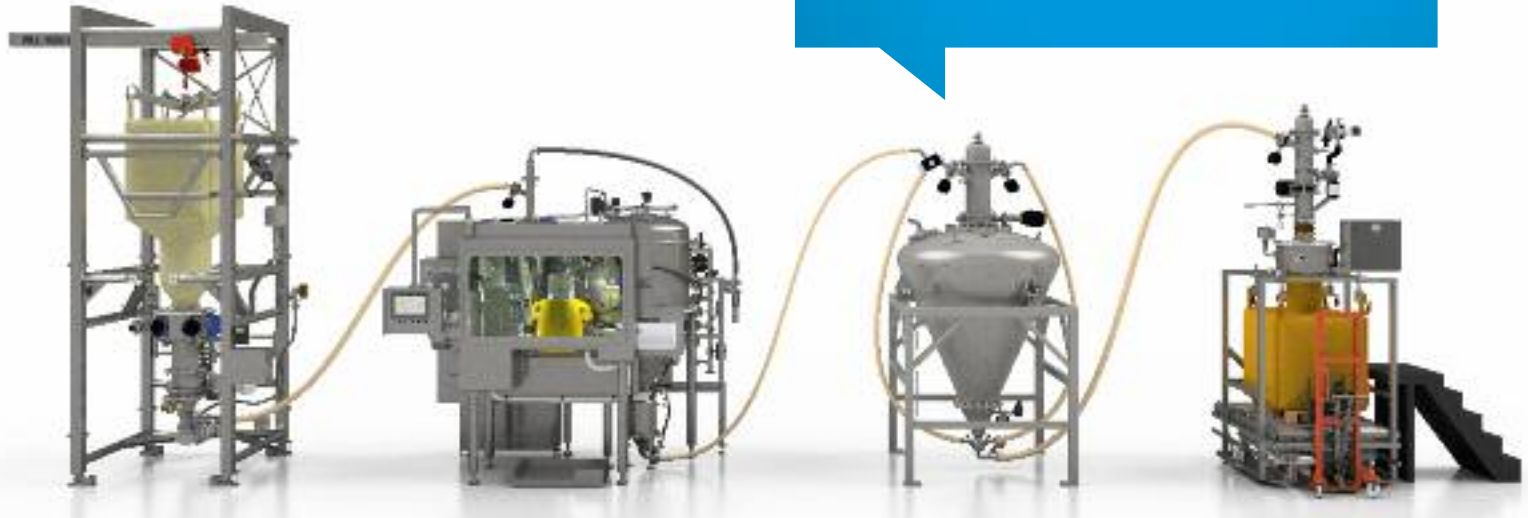
To improve ergonomics and flexibility, the MC DecJet® series can be operated both vertically and horizontally with full SIP and CIP options for sterile production. It also has green credentials as it has an optimized gas flow, therefore less gas consumption than current systems. It can be supplied contained for HPAPIs or non-contained for non-toxic products.

	Nominal diameter	Estimated capacity	Batch size	Process gas @ 7 bar
MC DecJet® 30	33 mm (1.3 inches)	0.1 g to 50 g/h	0.2 g to 50 g	0.09 Nm ³ /min (3.18 CFM)
MC DecJet® 50	50 mm (2 inches)	35 g to 200 g/h	1.5 g to 500 g	0.19 Nm ³ /min (6.71 CFM)
MC DecJet® 100	100 mm (4 inches)	From 50 g 5.0 kg/h	3 g to 20 kg	0.412 Nm ³ /min (14.55 CFM)
MC DecJet® 150	150 mm (6 inches)	From 0.5 kg 30 kg/h	200 g to 100 kg	0.73 Nm ³ /min (25.8 CFM)
MC DecJet® 200	200 mm (8 inches)	1 kg to 40 kg/h	1 kg to 1000 kg	1.59 Nm ³ /min (56.36 CFM)
MC DecJet® 300	300 mm (12 inches)	5 kg to 200 kg/h	5 kg to 2000 kg	3.89 Nm ³ /min (137.37 CFM)
MC DecJet® 400	400 mm (16 inches)	10 kg to 300 kg/h	10 kg to 3000 kg	6.99 Nm ³ /min (246.85 CFM)

MC DecJet® - patented technology

MC DecJet® - patented technology

cGMP, REACH Aseptic Manufacturing & Process Integration



The MC DecJet® system range from MC DecJet® 30 to MC DecJet® 400 is supplied in accordance with US/EU Good Manufacturing Practices (GMP) guidelines. All of Dec's jetmill technology is further available for aseptic manufacturing when sterile products are involved and can be easily integrated into an

existing production line. Our PTS technology (Powder Transfer System) can transfer, mix and discharge sensitive powders with no leakage, contamination or physical property changes from and towards any process step.

Dec's „Single Pass Jet Milling Technology“ used in the new range surpasses all existing jet milling systems on the market in terms of performance, product recovery and PSD manipulation.

One Pass – One Time.



MC DecJet® 150 Micronizing and Conditioning Isolator



MC DecJet® 200 Isolator and high containment pack-off facility



Dec provide high quality powder handling and process containment solutions for the pharmaceutical, chemical, food and cosmetic industries. These include a wide range of patented products that enhance safety, hygiene, containment, reliability and productivity.

The depth of Dec's knowledge and their ability to develop innovative new technologies make them an invaluable partner for both multinationals and specialist organizations. As a result, more than 5000 systems from Dec have been successfully integrated into production sites of numerous companies worldwide.

With true worldwide coverage through subsidiaries in Germany, Great Britain, Ireland, Poland, USA, India, China and agents covering over 40 countries, the Dec Group provides its customers with global expertise in process containment technologies and a reliable network for local support.

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