Micronizing

MC DecJet® 30 R&D

- Hundreds of installations worldwide
- Most advanced jet mill on the market
- Effective with more products than any other jet mill available today
- Highly efficient
- Single pass technology
- Handles sticky, abrasive and very hard products
- Scalable product range
- Miniaturized dimensions
- Total absence of screws
- Accurate reproduction from development to production

Micronizing

MC DecJet® 30 R&D

The MC DecJet 30® is the perfect tool for R&D teams seeking the ability to micronize very small quantities of material.

The MC DecJet® 30 works independently with just a nitrogen bottle, with the process at a constant temperature (endothermic). The powder is fed at subsonic speeds (app. 50 m/s) into the flat cylindrical milling chamber through a venturi. The system uses pressurized air or nitrogen.

Once the particles are inside the milling chamber they are accelerated by a series of jets around the perimeter to supersonic speeds (300 m/s), in a spiral movement. The micronizing effect occures when the slower incoming particles and the faster particles in the spiral path collide. While centrifugal force retains the larger particles at the perphery of the milling chamber, the smaller particles exit with the exhaust gas from the centre of the chamber. The PSD (Particle Size Distribution) is controlled by adjusting 3 main parameters:

Grind pressure - the energy used to micronize the product, increasing pressure, increases the micronisation effect.

Feed pressure - the energy used to introduce the product into the milling chamber.

Feed rate - the concentration of product fed into the milling chamber; the greater the feed rate, the less the micronsation effect, because particles must have space to achieve proper acceleration before collision.

Scalability

Whilst some scientists have been able to obtain the wanted PSD of their powder with existing systems, they are not scalable. The same PSD obtained with the MC DecJet® 30 is possible with every MC DecJet® system, including large production units up to 300 kg/h.

Single collection point

This feature is particularly important because it guarantees the homogeneity of the PSD of the batch, as in the entire MC DecJet® range. For the MC DecJet® 30 this characteristic is even more critical, since there is no loss of the finest particles, a typical feature of two-collecting-point mills, where the surface in direct contact with the micronized product is greater.

Further advantages:

- rapid and easy cleaning
- total absence of screws
- miniaturized dimensions (H 529 x L 180 x W 260 mm)

Technical Data

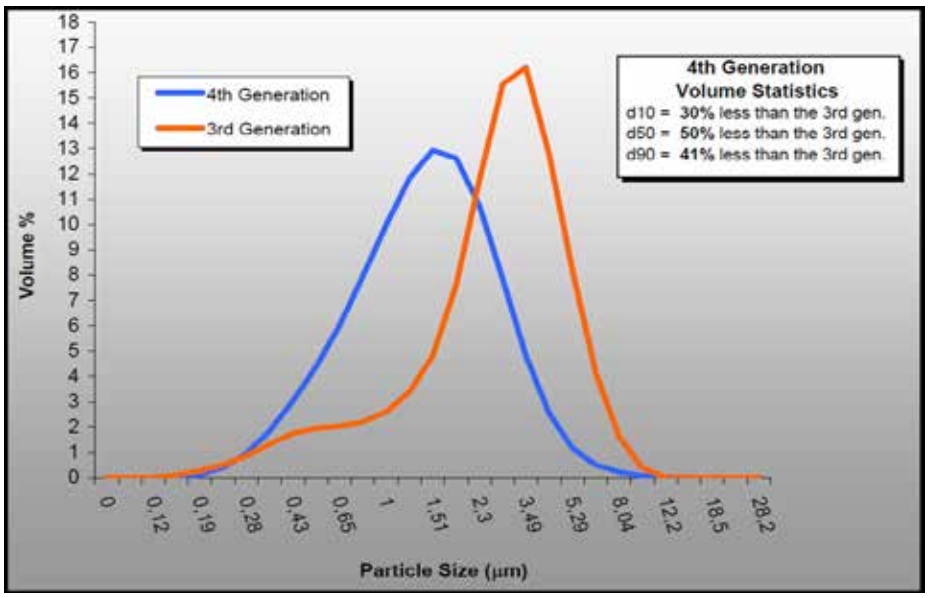
Nominal diameter	Estimated capacity	Batch size	Process gas @ 7 bar	Process gas @ 12 bar	Installed power
33 mm 1.3 inches	0.1 - 50 g/h	0.2 - 50 g	0.09 Nm3/m (3.18 CFM)	0.18 Nm3/m (6.36 CFM)	-

Example of micronized products

Very small batches: Lactose
- Quantity of product fed: 0.3 g
- Yield: 0.22 g, 73%

Medium batches: Peptide
- Quantity of product fec: 1 g
- Yield 0.88 g, 88%

Bigger batches: Polipeptide
- Quantity of product fed: 50 g
- Yield: 49.3 g, 98.6%



MC DecJet® - patented technology

Powder Handling Excellence

TEKEMAS

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