



Micronizing

DEC MicroJet 10

- The Perfect Tool for Research and Development
- The most advanced jet mill on the market – CFD designed
- Effective with more products than any other available today
- Highly efficient “Single Pass Technology” – 100% Yield Recovery
- Tested with Real Life compounds
- Including sticky and abrasive products
- Scalable product range
- Accurate reproduction from development to production

DEC MicroJet 10

The DEC MicroJet 10* is the perfect partner for Research and Development teams who need to micronize very small quantities of material (50 to 1500 milligrams) allowing many more trials using limited or costly products requiring very high yields up to 99.9 %.

Technical features

Based on the newly developed CFD (Computational Fluid Dynamics) Technology, the CFD engineered **MicroJet 10** is the first in a series of new jet mills to be released.

The system fits into the existing MCOne chassis and can operate independently with just a nitrogen bottle, with the process at a constant temperature (endothermic). The powder is fed into the system through the new Rota-Feed system allowing for micronizing experimental runs of 50, 500, 1500 milligrams to be performed.

Combined with the monoblock design and the use of "smoothflow" technology ensure high velocities and increased energy is imparted to the particles entering the milling chamber.

This increases residence time, thus giving a more improved manipulation of the Particle Size Distribution Curve.

The system uses pressurized air or nitrogen with the new and revolutionary design.

With the particles inside the milling chamber they are accelerated by a series of jets around the perimeter to supersonic speeds. The micronizing effect occurs when the slower incoming particles and the faster particles collide. Centrifugal force retains the larger particles at the periphery of the milling chamber, the smaller particles exit with the exhaust gas from the centre of the chamber.

The Particle Size Distribution is controlled by adjusting the 3 main parameters:

- Grind Pressure – the energy used to micronize the product, increasing pressure, increases the micronization 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 micronization effect, because particles must have space to achieve proper acceleration before collision.

* patent pending

Technical Data

Nominal diameter	Estimated capacity	Batch size	Process gas @ 7 bar	Process gas @ 12 bar	Installed power
<25 mm	From 50 mg to 1500 mg	50 mg to 1500 mg	0.06 Nm ³ /min	0.10 Nm ³ /min	-

Scalability

Whilst some scientists have been able to obtain the wanted dimension Particle Size Distribution (PSD) of their powder with existing systems, they are not scalable. The same PSD with the **DEC MicroJet 10** is possible to achieve with every jet mill in the MicroJet range, including to large production such as the **DEC MicroJet 200**.

Combined Filtering and Product Collection Point

The feature is particularly important because it guarantees the homogeneity of the PSD of the batch and is available as an option for the complete new MicroJet range of jet mills. For R&D scale batches where material is limited and costs are high, this ability to return almost 100 % recovery rates is most critical. It can also be configured as a two-collecting-point mill if required.

Intuitive Quick and Easy Assembly

Assembly and disassembly of the **DEC MicroJet 10** with its limited number of components allows easy and rapid cleaning and cleaning validation, especially qualified for the pharmaceutical industry, where cGMP are imperative. All components can be easily cleaned in an ultrasonic bath.

Simplicity

Total absence of screws (replaced by tri-clover connections), no crevices, thanks to its smooth and regular surfaces.

Miniaturized dimensions

Easy to move and bring anywhere – a true laboratory unit, with a range of portable accessories (nitrogen bottle, travel case, nanofeeder for accurate dosing and more).