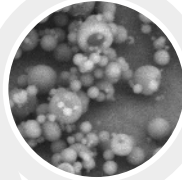
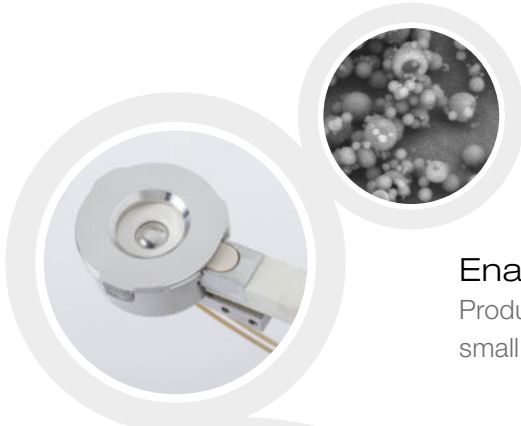




# Nano Spray Dryer B-90 HP

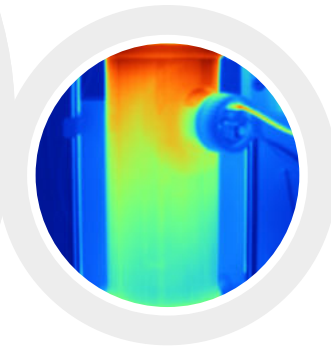
## Small particles, small samples, high yields

Gently processing of the smallest sample amounts into submicron particles with little loss are the key features characterizing the Nano Spray Dryer B-90 HP. The 2<sup>nd</sup> generation instrument offers enhanced productivity and a better handling. It enables applications in the pharmaceutical industry, in life- and material sciences – whenever small particles make the difference.



### Enabling

Production of particles with extraordinarily small diameters (0.2 - 5  $\mu\text{m}$ )



### Innovative

Conjunction of three patents developed by BUCHI for optimized productivity & handling.



### Economic

Reduce R&D costs with effective use of precious sample



# Nano Spray Dryer B-90 HP

## Key Features and Advantages



### Heater module

Generates a gentle flow of drying gas and provides an even heat distribution

### Spray head

Atomizes liquids as solutions, nanoemulsions and nanosuspensions into finest droplets

### Pump module

Continuously delivers sample to the spray head.

### Display

Intuitive control of process parameters

### Collecting electrode

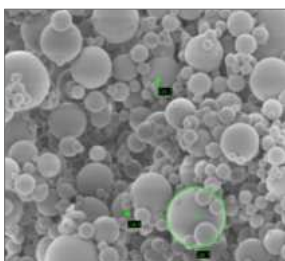
Efficiently recovers smallest particles (up to 90%)

### Outlet temperature sensor

Precisely monitors the outlet temperature

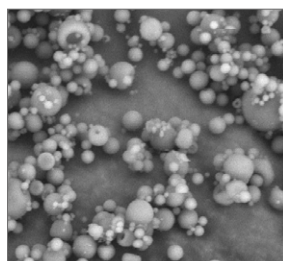
## Application Examples

### Pharma:



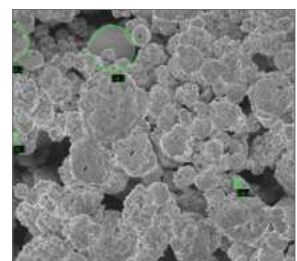
Poly(lactide-co-glycolide) (PLGA)  
Widely used in drug delivery applications

### Life Sciences:



Bovine Serum Albumin (BSA)  
Gentle processing for proteins applications

### Material Science:



Silicon Dioxide (SiO<sub>2</sub>) Agglomeration of Nanoparticles for ceramic applications



### Patented heater module

The Heater Module produce a laminar stream of drying gas and provides an even heat distribution.



### User-friendly spray head

The spray head was designed to spray dry small samples (< 2 mL) and to be easy to assemble and to clean.



### Efficient collecting electrode

The 17'000 V tension applied to the collecting electrode allows the efficient recovery (up to 90%) of smallest particles.



### Innovative nebulizers

Nebulizers in the sizes small, medium and large allow the finding of the perfect balance between small particles and high throughput (up to 200 mL/h).



### Inert Loop B-295

Condenses organic solvents out of the stream of drying gas. For safe and clean handling of organic solvent based samples in closed loop.



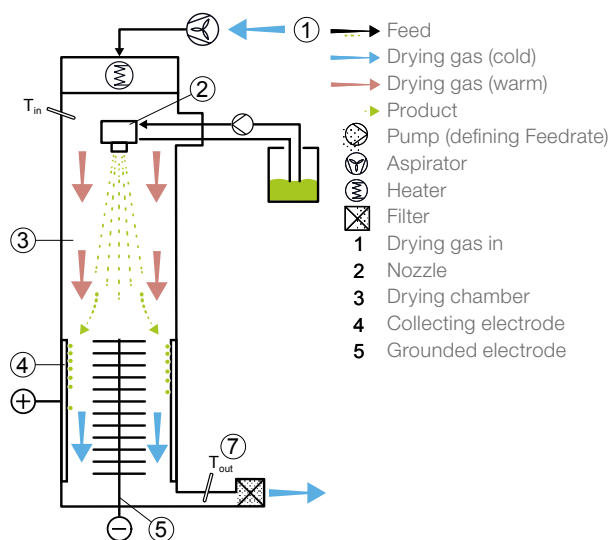
### Dehumidifier B-296 Nano

For the removal of humidity from the drying gas in open and closed loop mode.

## Method of Operation

The Nano Spray Dryer B-90 HP is a user friendly lab scale spray dryer. The modular glass construction allows the visualization of the process and can easily be cleaned and assembled by one operator. In one single process step, even the smallest particles can be comfortably produced.

Nano Spray Drying follows these general steps: Sample preparation, atomization and drying of the droplets within the drying chamber, capturing of the produced particles by the collecting electrode and recovery of the powder.



Nano Spray Dryer B-90

## B-90 HP: Your most important benefits



### Enabling

- Controlled and safe production of small particles (0.2-5  $\mu\text{m}$ )
- Increase of surface contact area by reducing particle size
- Preservation of molecular activity due to gentle process conditions



### Innovative

- 2<sup>nd</sup> generation spray head for optimized productivity and handling
- Patented airflow system for gentle solvent evaporation and high recoveries
- Auto-Stop mode avoids the machine to run empty



### Economic

- Process very small volumes (< 2 mL) of sample quickly
- Low product loss due to efficient particle recovery
- Easily accessible application database and support

## Complete your portfolio



**Mini Spray Dryer  
B-290**  
World leading laboratory Spray Dryer



**Encapsulator  
B-395 Pro**  
Gentle, sterile bead and capsule production



**Inert Loop  
B-295**  
Spray Drying organic solvents



**Dehumidifier  
B-296**  
Reproducible drying air for Spray Drying

