

VFC-LAB 3 with 8" Wurster Accelerator

Wurster Coating of Metal Powder

The Process...

This trial contributes to the development of a novel coating process for fine particles with diameters of around **40µm**. The innovation lies in the use of Freund-Vector's patented wurster spray system that utilizes an outer sleeve placed around the wurster gun called the Wurster Accelerator. The accelerator creates an air curtain that diverts product away from the spray nozzle tip, optimizing product movement through the spray zone and reduces processing times. The system is suited for the coating of particles ranging from fine powders (~10 micron) up to small pellets (2-3 mm).

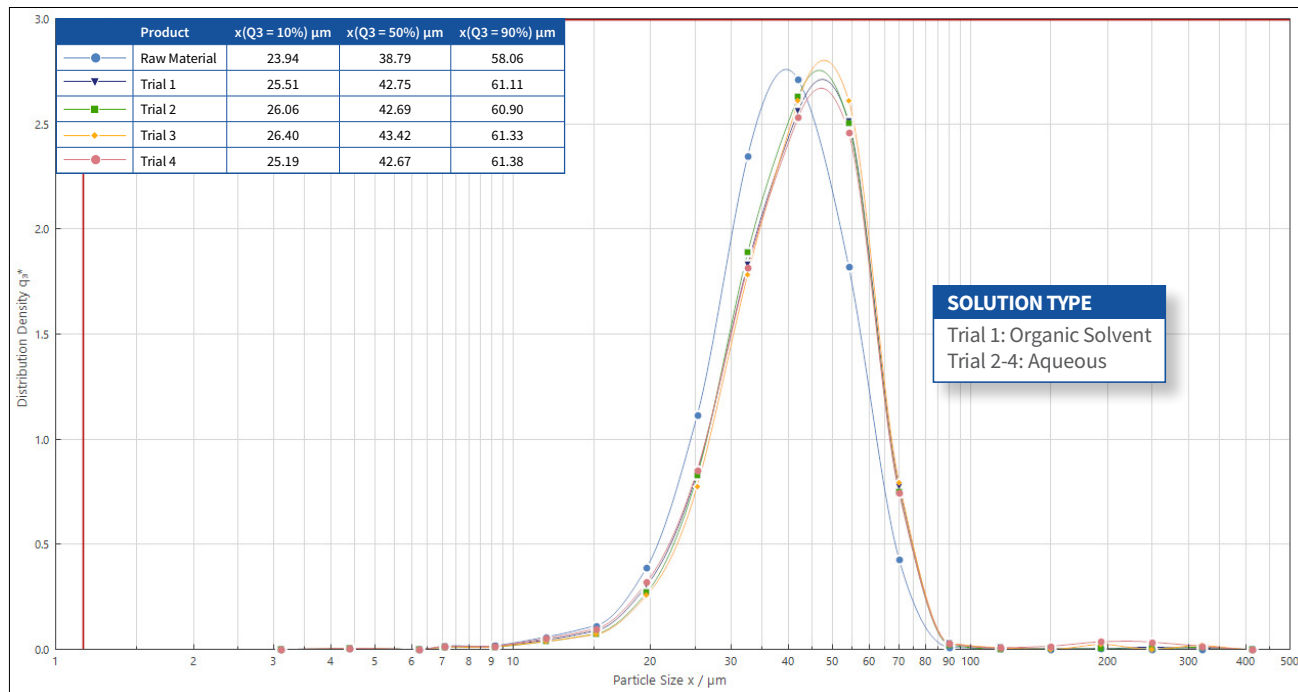
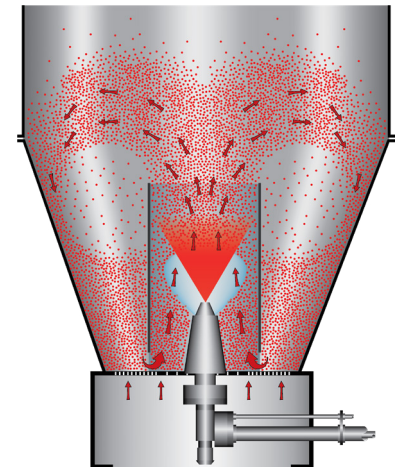
General Information...

Process Equipment:

- ✓ VFC-LAB 3 with 8" Wurster Accelerator
 - 1.2mm Nozzle
 - 2.6mm Air Cap
 - FP2 Air Distribution Plate
 - Betamesh50 Product Retention Screen
 - Pleated Polyester Filters
- ✓ Silverson LMA-5 Homogenizer
- ✓ IKA Overhead Mixer

Parameters...

Partition Height:	1"
Batch Size:	20 kg
Solution:	Proprietary Info
Airflow:	40 cfm
Nozzle Air:	18 psi
Accelerator Air:	22 psi
Inlet Air Temperature:	92° C
Product Temperature:	36 - 40° C
Solution Flowrate:	~39 g/min
Total Solution Sprayed:	4355 g
Spray Time:	112.8 min



The Conclusion...

All processes significantly shifted the Particle Size Distribution (PSD) to the right, indicating the coating material applied appropriately without agglomeration. The results of the trials demonstrates the Wurster Accelerator system effectively coats particles with an average size of **40µm** with negligible agglomeration defects. From these series of tests, Freund-Vector can state equivalent processing results for starting particles as low as 10µm.