



**Experts in Solid
Dosage Technology**

A Division of *Spraying Systems Co.*



POLARDRY®

ELECTROSTATIC SPRAY DRYER
MODEL 0.1

CLEAN. COMPACT. COOL.

The most recent innovation from Fluid Air just became smaller and more portable. The patent-pending PolarDry® Model 0.1 cuts down on the size of its parent models, but still retains the features that make it a force to be reckoned with. Check out some of the features and benefits of the newest addition to this game-changing product line.

FEATURES & BENEFITS

- Compact
- cGMP design
- Compliant construction
- Autoclavable for sterile application
- Electrostatic, low temperature spray drying
- Batch Architect™ PLC controls with datalogging
- Flexible with optional high temperature & Ultrasonic spray drying
- Safe – Small enough to fit in most lab fume or containment hoods

PROCESS SCALABILITY

PolarDry® was designed around a complete line of patent-pending machines that share similar process characteristics and key features so you can easily scale-up through the life cycle of your products.



PRODUCT BENEFITS:

- No heat degradation
- Low volatile loss
- No oxidation
- Superior microencapsulation
- Controlled agglomeration

POLARDRY® MODEL 0.1 ELECTROSTATIC SPRAY DRYER SPECIFICATIONS

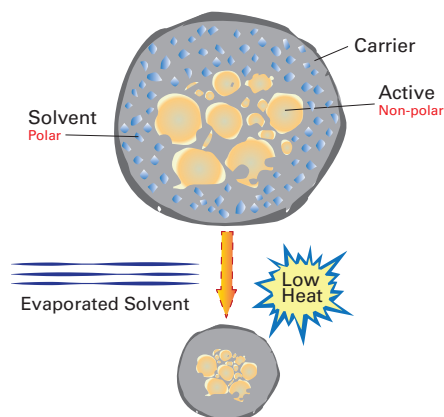
GENERAL		DRYING GAS PERFORMANCE	
Application	cGMP	Drying Gas	Nitrogen
Control System	Batch Architect™ with 7" Touchscreen	Max. Inlet Temperature	200 °C
Overall Dimensions	27.5" H x 30" W x 20" D (0.70m x 0.76m x 0.5m)	Min. Inlet Dew Point Temp	20 °C
Collection Volume	0.25 Liters	Nozzle Pump Type	Peristaltic
CAPACITY		QUALITY CRITICAL SENSORS	
Nozzle Type	Electrostatic, Ultrasonic*, Two Fluid*	Drying Gas Flow	Drying Gas Temperature
Minimum Evaporation Rate	0.1 Kg/hr 100 g/hr	Outlet Temperature	Atomizing Gas Pressure Transducer
UTILITY REQUIREMENTS			
Electric		120VAC/1PH/50-60Hz/20 A	
Compressed Nitrogen at 20 °C		15 SCFM @ 100 PSI 690 kPa @ 26 NM³/hr	
Exhaust		1-1/2" Sanitary Connection	

*Optional

HOW DOES ELECTROSTATIC SPRAY DRYING WORK?

In microencapsulation, each emulsion component has differing polarities. The solvent and carrier, being the most polar of the group, will have the largest electric dipole moment. The active, being less polar, will have a smaller dipole. The solvent molecules will repel each other and the solid particles. This will force the solvent and carrier to migrate to the outer surface of the droplet, while the active will remain at the center.

Driving the solvent to the outer surface creates the ideal drying condition, leading to a near perfect encapsulation of the active without the use of high evaporation temperatures. Although the above applies to emulsions, a similar stratification of solid/solvent feedstock also occurs resulting in a low drying temperature requirement.



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