

# Organic Spray Dryer

Inert-atmosphere spray drying for flammable and oxygen-sensitive solvents

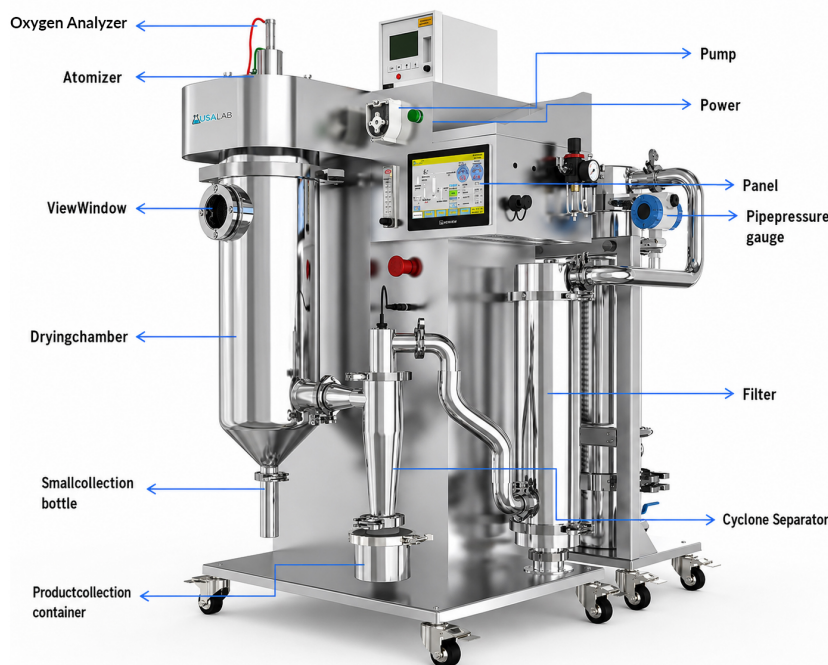


FIG. 1 — SYSTEM COMPONENTS, FRONT VIEW

## OVERVIEW

The USA Lab Organic Spray Dryer is a closed-loop spray drying system specifically designed for safely drying products containing flammable, volatile, toxic, or oxygen-sensitive organic solvents. Unlike conventional spray dryers that use air as the drying medium, this system utilizes an inert nitrogen atmosphere to create a safe, oxygen-free processing environment while allowing valuable solvents to be recovered and reused.

Engineered for laboratory research, product development, and pilot-scale production, the system is ideal for drying suspensions and solutions containing solvents such as ethanol, methanol, acetone, hexane, isopropyl alcohol, and other volatile organic compounds. The closed-loop design minimizes emissions, protects oxidation-sensitive materials, and improves process safety when handling combustible solvents.

With nitrogen recirculation, integrated solvent recovery, cyclone separation, and high-efficiency filtration, the Organic Spray Dryer delivers a reliable solution for solvent-based applications where safety, product quality, and solvent reuse are essential.

### IMPORTANT SAFETY NOTICE

For use with organic solvents, low flash-point materials, and oxygen-sensitive applications. Always follow proper ventilation, inert gas, solvent recovery, and facility safety requirements.

## PERFORMANCE

<b>Model</b>	USA Lab Organic Spray Dryer
<b>Maximum Water Evaporation</b>	2000 mL/h
<b>Feed Rate</b>	50–2000 mL/h
<b>Drying Time</b>	0.8–1.5 sec

## TEMPERATURE CONTROL

<b>Intake Air Temperature</b>	30–250°C (±0.5°C)
<b>Outlet Air Temperature</b>	30–100°C (±0.5°C)
<b>Electric Heater</b>	3.0 KW / AC220V; material: 2520 special stainless steel
<b>Air Temperature Monitoring</b>	Taiwan PT-100 platinum resistor, intelligent PID control

## AUTOMATION & CONTROL

<b>Control System</b>	Germany Siemens PLC automation control system; imported 7-inch color touchscreen
<b>Software Version</b>	IN-OS 1.0 (independent IP), visual touch operation; displays inlet/outlet air temperature, frequency conversion, and needle frequency; data recording and export, curve analysis, alarm and overload protection
<b>Automatic Plugging Device</b>	Automatic needle frequency adjustable, 0–60 sec/time (manual needle function also available)

## SAFETY SYSTEMS

<b>Oxygen Measuring System Detection Range</b>	0–100%
<b>Oxygen Detector Module</b>	Ensures oxygen concentration is below 3% before starting feeding (value can be set)
<b>Pressure Measuring System Range</b>	0–100 kPa
<b>Explosion-Proof Module</b>	Automatic pressure relief above 3 kPa (value can be set)

## DIMENSIONS & POWER

<b>Drying Tower Size</b>	8.03" × 25.20" (H)
<b>Filter Recovery Size</b>	5.24" × 21.65" (H)
<b>Condensing Unit Size</b>	6.26" × 32.68" (H) × 2
<b>Overall Size (L × W × H)</b>	39.37" × 39.37" × 47.24"
<b>Power Source</b>	220V; 60Hz
<b>Gross Weight</b>	150 KG   330 lbs