

## Critical Point Dryer (CPD)



As the substance in a liquid body crosses the boundary from liquid to gas (drying via heating), the liquid changes into gas at a finite rate, while the amount of liquid decreases. When this happens within a heterogeneous environment, surface tension in the liquid body pulls against any solid structures the liquid might be in contact with. Delicate structures such as cell walls, the dendrites in silica gel, and the tiny machinery of microelectromechanical devices, tend to be broken apart by this surface tension as the drying via heating occurs. In freeze-drying, some structures can be disrupted even by the solid-gas boundary.

Supercritical drying, on the other hand, changes liquid to gas yet does not cross any phase boundary, instead passing through the supercritical region, where the distinction between gas and liquid ceases to apply. Densities of the liquid phase and vapor phase become equal at critical point of drying.

Hence critical point drying is a better method of dehydrating biological tissue prior to examination in the Scanning Electron Microscope because the cell walls or other delicate structures are better preserved.

The K850 combines versatility and ease of operation. Built-in thermo-electric heating and adiabatic cooling allow precise temperature control. The vertical pressure chamber (32mm diameter x 47mm) has a side viewing port, which allows a clear view of the liquid meniscus during filling.

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