Leica EM CPD300

Automated Critical Point Dryer

Application

- The drying of biological specimens such as pollen, tissue, plants, insects for SEM analysis
- The drying of industrial samples , for example MEMS (Micro Electro Mechanical Systems

Method

Crytical point drying is a method which use of CO_2 as transitional fluid because its critical point is at 31 °C and 73,8bar. Technically these temperature and pressure requirements of the CO_2 can be implemented relatively easily then for water (critical point is 374 °C and 228,5bar). The water in the cell is replaced by an acetone which is very soluble with liquid CO_2. This procedure is follow by substitution with liquid CO_2 through serial dilution steps. The increasing the temperature and pressure will transfer the CO_2 through its critical point into a subcritical state. By controlled depressurization and constant temperature is subcritical CO_2 convert into its gaseous phase without crossing the phase boundary between liquid and gas. This technique of preparing sample for scanning electron microscope is more gentle and better preserve structure than air drying sample.