

### Freeze Drying - Sample Preparation



Photograph courtesy of Labconco Corporation

Columbia Analytical incorporates the use of freeze-drying of sediment and tissue samples for environmental analysis.

Freeze-drying of sediment and tissue samples is performed prior to extraction and analysis for Polynuclear Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Pesticides, Dioxins, and Metals. The use of freeze-drying eliminates or reduces the undesirable effects of water.

The most significant benefits are lower detection limits and more quantitative determinations. In addition to lower detection limits and better recoveries, freeze-drying of samples allows for complete homogenization of the sample matrices. Thus, improved precision is realized. This is particularly significant when analyzing heterogeneous samples (e.g. high organic sediments, whole-body tissues, etc.).

Columbia Analytical has been active in research and development of procedures for preparation and analyses of sediment, tissue and water samples. Our laboratory specializes in the analysis of tissue and sediment for low-level chemical constituents and has developed procedures for providing data of high technical quality that meets standard validation criteria. A summary of some of our experience over the last ten years may be found in the Columbia Analytical Marine Statement of Qualifications (SOQ).

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