

Analysis of food samples using microwave digestion and ICP-MS for analysis

Safety in food is a major concern for the consumer which is highlighted by recent recalls. Of equal importance are the nutritional levels of mineral and trace nutrients and labeling claim from food manufactures. Because food encompasses a wide variety of matrices such as meats, vegetables, starches and drinks, analysis can be time consuming. Determining a wide range of concentrations for major and trace nutrients, and toxic metals may require several instruments and different digestions and dilutions. A microwave digestion can digest all the food types and have complete digestions in a relatively simple nitric acid matrix. Inductively coupled plasma-mass spectroscopy (ICP-MS) with Dynamic Reaction Cell has a large linear dynamic range of up to nine orders of magnitude with detection limits in the sub ug/L range for most of the periodic table with little interference.

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