Digestion of Food and Other Organic Samples for Element Analysis with ICP

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Industrial food products and their agricultural raw materials rank among the most thoroughly monitored and well-documented substances of everyday life. Due to their significant impact on human health - especially for vulnerable groups such as infants and young children - quality control is required by law in most countries. Accordingly, trace element analysis for toxic metals like lead, cadmium, mercury, and arsenic has become routine in both industrial and governmental laboratories.

In this session, participants will engage in a hands-on workshop, offering the opportunity to perform food sample digestion and gain experience with state-of-the-art equipment. While the instrument is running, key background information and practical considerations for successfully digesting food and other organic materials will be discussed, and representative examples will also be presented.

In addition, there will be room for discussion, allowing participants to ask questions and clarify specific issues related to their own analytical challenges.

.Accurate elemental analysis of food and organic samples requires effective sample preparation, and microwave acid digestion plays an important role in this process. It enables the precise and accurate determination of trace elements down to very low concentrations - essential for ensuring food safety and regulatory compliance. Industrially processed foods and their agricultural raw materials are among the most closely monitored and well-characterized substances in daily life. Because of their direct impact on human health - particularly for sensitive groups such as infants and young children - chemical analysis is required by law in most countries. As a result, trace element testing for toxic heavy metals like lead, cadmium, mercury, and arsenic is a routine task in both industrial and governmental food laboratories.

This presentation will outline key considerations for the successful microwave digestion of food and other organic matrices. Examples - from baby food to plant-based products - will illustrate typical challenges and effective strategies for obtaining reliable and reproducible digestion results.

To complement the presentation, participants will also take part in a hands-on workshop, offering the opportunity to perform food sample digestion and gain practical experience with the techniques discussed.