



U.S. Department of Health & Human Services



U.S. Food and Drug Administration

# **Elemental Analysis Manual**

## **for Food and Related Products**

The following is a section of the Elemental Analysis Manual for Food and Related Products.

For additional information and to view other sections of the manual, visit the Elemental Analysis Manual for Food and Related Products web page at

<http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006954.htm>.



# Elemental Analysis Manual

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### 3.1 Safety

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The methods in this manual do not attempt to address all safety issues associated with their use. There are many dangers and hazards requiring precautions by the analyst. The various acids used (hydrochloric, nitric, acetic) can cause serious eye and skin damage. High-pressure digestion vessels have dangers related to their use that must be understood for proper use. Fume hoods should be used when possible but especially when opening microwave digestion vessels. The user of these methods must establish appropriate safety and health practices prior to use. Lab coats, gloves and eye protection (safety glasses, goggles, face shields, etc) must be worn at all times. Eye wash stations and safety showers should be tested on a regular basis. Dispose of hazardous and acidic waste in accordance with the laboratory hazardous waste plan.

Reagents should be regarded as potential health hazards and exposure to these compounds should be limited. Each laboratory is responsible for maintaining a current awareness file of OSHA ([Occupational Safety & Health Administration, U. S. Department of Labor](#)) regulations regarding the safe handling of the chemicals specified in the methods. Material safety data sheets<sup>1</sup> for these chemicals are to be available to the user.

The argon plasma and graphite furnace emit UV radiation. Avoid looking at either.

Analyst must comply with federal, state and local disposal and waste regulations.

#### REFERENCES

1. Information on Material Safety Data Sheets, Wikipedia, The Free Encyclopedia; 2014 Jun 7, 11:09 UTC. [accessed September, 2014]. [Available internet](#)