

GLI Method Summary

Wet Ash Digestion of Inorganic and Organic Compounds for Metals Analysis by Inductively Coupled Plasma Optical Emission Spectroscopy, Flame Atomic Absorption, Graphite Furnace Atomic Absorption, and Mass Spectroscopy

Governing SOP: G-30B Rev 10

Analyte: Various

Range: ppm-%

Decomposition Procedure	The sample is charred using H ₂ SO ₄ . If analyzing for metals that form insoluble sulfates, HClO ₄ and HNO ₃ are used to char the organic material. H ₂ O ₂ may be added to assist in the digestion of organic material also. After charring the sample, HNO ₃ is added and the sample is refluxed to solubilize the metals present. If the solution becomes cloudy, HCl is added to affect complete digestion. HF can be used if silicon is present in the sample but is not an analyte of interest. All HF used is restricted to Teflon vessels. The clear digestate is quantitatively transferred to a Class A volumetric flask and brought to final volume. The sample is now ready for analysis.
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References

R. Bock, *Decomposition Methods in Analytical Chemistry*, T. & A. Constable Ltd., Edinburgh 1979.

Official Method 990.08 "Metals in Solid Waste by ICP-OES." *Official Methods of Analysis of AOAC International*, 16th Edition, 5th Revision, 1999.