## Title

Application of prompt gamma activation analysis (PGAA) to oceanic floor geothermal vent-produced metal sulfides



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APPLICATION OF PROMPT GAMMA ACTIVATION ANALYSIS (PGAA) TO OCEANIC FLOOR GEOTHERMAL VENT-PRODUCED METAL SULFIDES. D. L. Perry, R. Gatti, R. B. Firestone, and P. Wilde, Lawrence Berkeley National Laboratory, Berkeley, CA 94720 and G. L. Molnar, Zs. Revay, and Zs. Kasztovszky, Department of Nuclear Research, Institute of Isotope and Surface Chemistry, Chemical Research Center, POB 77, H-1525 Budapest, Hungary.

Research has been conducted on the elemental analyses of oceanic floor geothermal vent-produced metal sulfides using prompt-gamma neutron activation analysis (PGAA). These materials are representative of multi-mineral phases that contain silicate impurities in addition to the predominant metal sulfide mineral phases. Analytical data are discussed with respect to the dominant and minor elements that are present and the possible mineral phases that are represented. Additionally, cross sections for the major and minor contaminant elements are given, the sets of elements including both transition metal, main group, and rare earth species. The PGAA analytical technique and possible other applications to geological samples are discussed.

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