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A study of wet chemistry determinations of iron cations in biotite

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Abstract: Content of iron cations in three biotite specimens of true trioctahedral mica were determined by Mössbauer spectroscopy, electron microprobe and wet-chemistry methods. International certified reference materials were analyzed simultaneously with micas to evaluate the accuracy of the wet-chemistry method. High precision Mössbauer spectroscopic Fe^{3+}/Fe^{2+} ratios coupled with the electron microprobe iron determinations were compared with the wet-chemical data. Comparisons of data show that in wet-chemistry method powdered micas dissolve more readily during acid attack than the granular micas and thus yield higher precision and accuracy.

Keywords: *biotite; iron cations; Mössbauer spectroscopy; electron microprobe; wet-chemistry; precision; accuracy.*

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