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# Refined Relationships between Chemical Composition of Dioctahedral Fine-Grained Mica Minerals and Their Infrared Spectra within the OH Stretching Region. Part I: Identification of the OH Stretching Bands

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**Abstract:** A large and representative collection of clay-size dioctahedral mica minerals differing in their chemical compositions has been studied by infrared (IR) spectroscopy in the OH stretching vibration region. Decomposition of the IR spectra in the individual OH bands has provided unambiguous identification of the band positions for each defined pair of octahedral cations bonded to OH groups. The presence of pyrophyllite-like local structural environments in samples having a deficiency of K in interlayers has been established. A set of the relationships between the OH frequencies corresponding to pairs of cations having different valency and mass has been found.

**Key Words:** Celadonite • Glauconite • Illite • IR Spectra • Leucophyllite • OH Stretching Frequency

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