

## MICROSTRUCTURAL CHARACTERIZATION OF WATER-RICH BOEHMITE (AlO(OH)): TEM CORRELATION OF APPARENTLY DIVERGENT XRD AND TGA RESULTS

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An understanding of the solid-phase thermodynamics and aqueous speciation of aluminum is critical to our ability to understand and predict processes in a wide variety of geologic and industrial settings. Boehmite (AlO(OH)) is an important phase in the system  $\text{Al}_2\text{O}_3\text{-H}_2\text{O}$  that has been the subject of a number of structural and thermodynamic studies since its initial synthesis [1] and discovery in nature [2]. Unfortunately, it has long been recognized that thermogravimetric analysis (TGA) of both synthetic and natural boehmite samples (that appear well crystallized by powder XRD methods) yields significant excess water – typically losing 16-16.5 wt. % on heating as compared with a nominal expected weight loss of 15.0 wt. % [3,4]. The boehmite used in our experiments was synthesized

References

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