
Characterization of the Solids Obtained by Pillaring of Griffithite (High Iron Content Saponite) with Al-Oligomers

Miguel Angel Vicente¹, Mercedes Suarez², Miguel Angel Bañares-Muñoz¹ and Jose Martin-Pozas²

¹ Departamento de Química Inorgánica, Facultad de Química, Universidad de Salamanca, Plaza de la Merced S/N, 37008-Salamanca, Spain

² Area de Mineralogía y Cristalografía, Departamento de Geología, Facultad de Ciencias, Universidad de Salamanca, Plaza de la Merced S/N, 37008-Salamanca, Spain

Abstract: Griffithite, a high Fe content saponite (Griffith Park, California) was pillared with Al polymeric solutions, using different Al/clay ratios. The cation exchange began when Al-polycation solutions were added, being completed during the dialysis of the samples. Pillared solids were obtained by calcination of intercalated precursors at 500 ° C. The content of Al₂O₃ increased from 7.35% in the natural griffithite to about 14% in the pillared samples, equivalent to the fixation of about 1.4 mmol Al per g of clay. The surface areas of the pillared griffithite were between 230– 300 m² g⁻¹. The intercalation and pillaring of griffithite were easier than that of a less-crystalline nonferrous saponite.

Key Words: Al₁₃-Keggin Polycation • Griffithite • Iron-Saponite • Pillaring • Porosity • Saponite

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