

ESTUDIO DE LAS TRANSFORMACIONES DE FASES GENERADAS POR EFECTO DEL CLORO DURANTE LA CALCINACIÓN DE ARCILLAS Y CAOLINES MEDIANTE DRX y SEM

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ABSTRACT: The removing of iron present in clays and kaolins, with the aim to improve their quality, has been previously studied by means of a pyrometallurgical chlorination process, using gaseous chlorine as reagent. In addition, it has been observed that during the burning stage of clays and kaolin in chlorine atmosphere some phase transformations occur induced by chlorination solid-gas reactions. In this work, a study of phase transformation in original samples and chlorination residuals is made by means of X ray diffraction (XRD) and scanning electron microscopy (SEM). Results obtained show that, in the kaolinitic samples, it appears the α -alumina (corundum) phase in the first stage of chlorination. At higher chlorination times this phase disappears due to the volatilization of the $AlCl_3$. On the other hand, it is observed that the kaolinite burning in chlorine atmosphere favours the formation of the mullite phase. Other crystalline phases present in the minerals, such as anatase and iron oxide, practically disappear after the samples chlorination.