

CHARACTERIZATION OF THE HYDROTHERMAL KAOLIN CLAY DEPOSITS, PARAIBA AND RIO GRANDE DO NORTE, NORTHEAST BRAZIL.

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The purpose this research is to investigate the occurrence, size distribution, yield and purity of the kaolin clay in the pegmatites from the pegmatite province of Borborema in the regions of the Junco do Serido in Paraiba and Equador in Rio Grande do Norte. These variables were analyzed considering various size fractions obtained by the wet sieving of the pegmatite samples. The pegmatites are classified in to heterogeneous and homogeneous types based on mineral zoning observed in the rocks. The kaolin clay fraction was separated from the rocks using the sieves of 74, 45, 38, 31 and 2 micron and the fractions retained in the sieves were quantified to generate statistical parameters through histograms and regression analysis. These information were used for a comparative analysis between the pegmatites investigated. The kaolin occur along with quartz, muscovite and other minerals. The kaolin yield in the heterogeneous pegmatite is very high because of the presence of pure feldspar zones which have altered to clay. Here impurities of quartz and muscovite are minimum. On the other hand the in the homogeneous pegmatite the clay occur disseminated with quartz and mica and kaolin yield tend to be less. The kaolin particles are very fine grained and sericite and quartz occur as impurities in the fraction finer than 31 microns. The X-ray diffraction analysis showed the mineral impurities are reduced in the clay fraction finer than 2 microns and a traces of such impurities still remain in the clay which went through wet sieving.