

APPLIED MINERALOGY IN THE EVALUATION OF GRANITIC ROCK AS FELDSPAR RAW MATERIAL SOURCE

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Applied mineralogy yields to the evaluation of two occurrences of K-feldspar from Três Córregos weathered porphyritic granites in Castro (PR), South of Brazil. The textural analysis performed by petrography, led to previsions about ore process behavior in order to achieve feldspar raw material. The rocks have feldspar grains of 20 to 50 mm, in a matrix with grain size less than 5 mm essentially constituted by quartz, andesine, amphibole and biotite, with minor titanite and iron oxides. Due to weathering the rocks are friable, with the matrix easily disassociated liberating the feldspar crystals. Considering these physical and grain size characteristics, a sieve classification could reach mineral segregation. The phenocrysts were concentrated in a coarse fraction (4 mm); an intermediary fraction (2 to 4 mm), contained a typical matrix quartz-feldspar constitution; a fine one (1 to 2 mm) represented the matrix composition; and, at last, a very fine fraction carried part of minor minerals, plus clay-minerals products of supergene alteration. The coarse and intermediary fractions were adequate to ceramic and glass industry specifications by milling, attrition and magnetic separation, so their products were submitted to fusibility tests. For one of the studied areas the products presented bubbles when fused, due to major quantities of sericitization inside the feldspars. Its application is indicated only for ceramic mass. For both areas, because of similar total alkalis content, the products can be well applied for glass storage vessels as feldspar or quartz-feldspar sand, considering the results of tests with soda-cal formulation.