

Industrial minerals of pegmatite bodies of the Borborema Province and its application in the ceramic industry.

¹PETTA, R. A.; ²WAUSCHKUHN, A. ¹Departamento de Geologia UFRN-Natal-RN; ²CAPES/DAAD - UFRN Brazil

In the Borborema Province (BP) exist about 1.500 mineralized pegmatite bodies. Most contain good reserves of feldspars at first quality, quartz, kaolinite, and mineralizations of Ta-Nb, Be, Sn and Li. The recent demand of industrial minerals, mainly kaolin and feldspar, made it necessary to develop new concepts on the investigations of the morphology of pegmatite bodies. This work present the study of the industrial minerals of the pegmatites of the BP, with direct application to the ceramic industry, and focuses on the internal zoning of the bodies and the internal mineral distribution.

Regional geological maps were elaborated, according to the three main minerals (feldspar, kaolin and quartz). The demarcation of the occurrence areas obeys the following criteria: (i) areas with real resources; (ii) areas with promising resources, (iii) areas with favorable resources and (iv) areas with no-favorable resources, settling down the homogeneous, heterogeneous and mixed types.

The existent units in these bodies evidence a mineralogy and quite varied texture, that were systematized in three basic types - fracture completion, substitution bodies and zones (marginal zone, wall zone, middle zone and nucleus).

The feldspar present in the pegmatites possesses chemical and physical characteristics that classify it as of first quality, and its alteration product kaolin as of good quality and appearance (white). The reserves are more than 10 million tons, divided among the municipal district of Equador, and Carnaúba dos Dantas, and approximately 1/3 of these are proven and suitable, and the remaining classified as potential reserves.