

Mineral Chemistry of four Neoproterozoic Magmatic Epidote-bearing Granitoids in the Alto Pajeú Terrane, NE Brazil

BRASILINO, R.G. , SIAL. A.N., FERREIRA, V.P. and WEINBERG, R.F.- NEG-LABISE, Dept. of Geology, UFPE, C.P. 7852, Recife, PE, 50732-970, Brazil. E-mail: rgb@npd.ufpe.br

This work describes four magmatic epidote-bearing high K calc-alkalic granitoids from the Alto Pajeú terrane, NE Brazil (Conceição das Creoulas, Caldeirão Encantado, Murici and Boqueirão), which are petrographically and chemically very similar to each other. They are coarsely porphyritic granodiorites and monzogranites intruded in gneisses and schists, and are constituted by microcline (often perthitic), plagioclase (An_{18-33}), quartz, biotite, hornblende, epidote, titanite, allanite, apatite and zircon. Epidote (up to 5% volume), is sometimes twinned, often with allanite core, partially resorpted by the magma, being observed in three textural relationships: (a) included in plagioclase, (b) rimmed by biotite and (c) with hornblende patches. All these plutons show low magnetic susceptibility ($< 0.4 \times 10^{-3}$ SI), except the Murici batholith where values of $1-2 \times 10^{-3}$ SI were recorded, indicating slightly higher oxygen fugacity during crystallization (magnetite occurs at accessory amounts). Amphiboles in three of these plutons are ferro-edenite to ferro-pargasite, but in the Boqueirão pluton (ferro-edenite to ferro-tschermakite). Al usually varies from 2 to 2.2, suggesting emplacement $P \sim 6$ kbar, except in the Boqueirão pluton, in which Al values are ~ 1.5 . $Fe/(Fe + Mg)$ in hornblende ranges from 0.48 to 0.61. In three plutons, epidote shows Ps contents in the 27-31% range, but in the Conceição das Creoulas pluton, Ps contents are in the 21-25% range (values ~ 21 for epidote included in plagioclase, and values ~ 25 for epidote rimmed by biotite). A rough negative correlation between Al in hornblende and $Fe/(Al+Fe)$ ratios of coexisting epidote was observed, confirming a relationship between the stability field of epidote and oxygen fugacity.