

## **PETROLOGY AND GEOCHEMISTRY OF CRETACEOUS ALKALINE DYKE SWARM FROM CABO FRIO (SOUTHEASTERN BRAZIL).**

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Alkaline rock occurring in the Cabo Frio (east of Rio de Janeiro) dyke swarm are mainly represented by intermediate to felsic types. They define two main suites: 1) phonotephrite-phonolite and 2) trachyandesite-trachyphonolite-trachyte. Both suites have potassic affinity. The intermediate rocks show a porphyritic texture with porphyritic index (P.I.) between 10 and 30% by volume. The main phenocrysts are salitic pyroxene and brown-green hastingsitic to pargasitic amphibole followed by minor biotite; zoned plagioclase (50-30 %An) and sanidine laths complete the phenocrystic assemblage. Interstitial nepheline grains occur in the groundmass. The trachyphonolitic and trachytic rocks show similar mineralogy and textures, ranging from aphyric to slightly porphyritic. Phenocrysts are sanidine and biotite followed by minor amounts of Fe-salitic pyroxene, scarce plagioclase (30-15% An). The phonolites are more or less porphyritic rocks. Ubiquitous phenocrysts are sanidine and nepheline followed by minor amounts of Fe-salite to aegirine pyroxene, brown-reddish biotite and nosean. The compositional variations of the recognized suites are clearly distinguishable in several variation diagrams and in the Petrogeny Residua's System. The Sr-isotopic ratios of the phonotephritic to phonolitic rocks are lower than those of trachyandesitic to trachytic rocks (0.70437-0.70442 and 0.70459-0.70475, respectively). Chemical and mineralogical trends support for the two recognized alkaline suites igneous evolutions dominated by low-pressure crystal fractionation processes starting from distinct mafic parental magmas. To generate the less SiO<sub>2</sub>-undersaturated suite major amphibole fractionation is not realistic, as constrained by petrography and heavy REE behaviour.