

METAMORPHIC EVOLUTION OF SPINIFEX-TEXTURED KOMATIITES FROM SOUTHERN MINAS GERAIS STATE, BRAZIL

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Pseudomorphous spinifex textured komatiites occur in greenstone-belt remnants, among others, in Alpinópolis Township, Morro do Ferro Greenstone Belt, southern margin of São Francisco Craton, and in the Rio Manso region, Nova Lima Group, southwestern Quadrilátero Ferrífero. In both cases, komatiites were transformed into clinoclase - Ca-amphibole rocks, with chlorite domains outlining former platy olivine. Textural relationships and mineral compositions permit to model the progressive metamorphic evolution of these rocks. Continuous Al enrichment of chlorite through tschermakitic substitution results in olivine porphyroblast and anthophyllite microporphyroblast crystallization in chlorite domains, due to Mg-Si migration. Ca-amphibole changes gradually from tremolite to hornblende, with edenitic substitution prevailing at this stage. Further increase in metamorphic grade leads to chlorite breakdown, producing olivine - orthopyroxene - hornblende - spinel associations, with olivine - orthopyroxene porphyroblast aggregates in granoblastic hornblende matrix with interstitial green spinel. Hornblende acquires more pargasitic compositions, with an increase in Al-tschermakitic as well as edenitic substitutions. At this stage, spinifex texture is lost. Peak assemblages are substituted in varying intensity by late, gradually lower-T assemblages, starting with chlorite reconstitution and blastesis of a second generation of anthophyllite, selective olivine serpentinization and orthopyroxene talcification, and final widespread serpentinization followed by talcification along shear-zones. Research supported by FAPESP grant 97/00640-5.