

GEOOTHERMOMETRY OF HYPERITES FROM THE BRASILIANO/PANAFRICAN COASTAL MOBILE BELT- RIO DE JANEIRO AND ESPÍRITO SANTO STATES

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Reactions coronas between olivine and plagioclase occur in tholeiitic gabbros from Espírito Santo State (Jacutinga and Itaoca) and Rio de Janeiro State (Amparo). They crop out as isolated bodies of small dimensions. Olivine, opx, cpx, plagioclase, ilmenite, Ti-magnetite and sulfides form the common primary mineral assemblage. Coronitic overgrowths due to the olivine-plagioclase reaction form concentric levels of opx, amphibole and simplectitic amphibole-spinel around an anheudral olivine center. Those from Jacutinga, Itaoca and Amparo are very similar in shape and composition pointing towards similar physical-chemical crystallization conditions. Temperatures of coronas formation were calculated using the Perchuck method, based on Mg-Fe ratios between opx and amphibole and using the Quilf software for olivine-opx - spinel. For Jacutinga and Amparo coronites temperatures are around 800°C +/- 100°C. For Itaoca around 700°C +/- 50°C. These high temperatures are close to those calculated for the formation of primary opx-cpx pairs (800/940°C) and, as expected, lower than the olivine-cpx pair (around 1000°C). The absence of consistent regional deformational signs as well as the lack of a metamorphic paragenesis are compatible with the calculated temperatures obtained. P-T conditions are compatible with the intrusion of the gabbros into the middle to lower crust, benefiting the development of the sub-solidus reaction. These data point towards a slow cooling environment at a late magmatic stage.