

GEOCHEMISTRY AND GEOTECTONIC SIGNIFICANCE OF NEOPROTEROZOIC OPHIOLITIC PERIDOTITES AND PYROXENITES: KAB AMIRI, EASTERN DESERT, EGYPT

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Abstract: The Kab Amiri ultramafic ophiolitic section comprises highly serpentinites and pyroxenites. The Kab Amiri ophiolite suite represents fragments of oceanic lithosphere that are developed in forearc setting in a supra-subduction zone environment. The clinopyroxenes chemistry reflect the strong affinity of pyroxenites toward the intra-oceanic forearc boninites. Serpentinites have been most likely formed directly from mantle-wedge olivine above the slab in which the fluids driven for the slab cause strong hydration and cooling of peridotites during an early stage of serpentinization. Pyroxenites show a very close relation to the serpentinites, which reflect that both are co-genetic with the rest of the mantle suite. Thus, the pyroxenites genesis is directly related to the contamination of their mantle source by crustal material and/or subduction-related slab fluids during mantle evolution in supra subduction zone setting.

Key words: Neoproterozoic; ophiolites; forearc; Raman spectroscopy; Egypt