

FE-CARPHOLITE-CHLORITOID ASSEMBLAGES IN METAPELITES-METASANDSTONES OF SKOPELOS ISLAND, N. SPORADES, GREECE

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In Skopelos island, Panormos area, metapelites-metasandstones which belong geologically to the Mesoautochthonous Complex of the Pelegonien Zone are characterised by the presence of Fe-carpholite-chloritoid assemblages. The common mineral assemblage in these rocks is: Fe-chloritoid \pm Fe-carpholite-sericite-chlorite-pyrophyllite-quartz \pm Cr-spinel \pm rutile) and in the adjacent metabauxites: chlorite-diaspore-hematite-rutile, chloritoid-diaspore-pyrophyllite-hematite-rutile, chlorite-diaspore-rutile. Microprobe analyses revealed that carpholite is characterised by X_{Mg} values between 0.15-0.20 and chloritoid by X_{Mg} values between 0.08-0.12, that is both minerals are Fe-rich. The coexistence of pyrophyllite + diaspore, the disappearance of kaolinite and the lack of kyanite suggest temperatures of metamorphism between 300°-380°C while the composition of carpholite indicates pressures in the order of 4-6 kbar. The presence of Fe-carpholite suggests metamorphic conditions of the low-blueschist facies while the parageneses: chlorite-pyrophyllite-quartz and chloritoid-pyrophyllite-quartz, which postdate Fe-carpholite growth, indicate an evolution to greenschist facies conditions.

NOBLE GAS ISOTOPE GEOCHEMISTRY OF VOLCANIC GASES FROM THE AEGEAN ISLAND ARC

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Volcanic gas samples from three of the volcanic centres of the Aegean island arc were analyzed by mass spectrometry for He, Ne, Ar, Kr and Xe isotopes. The gas samples from Milos and Santorini show high $^3\text{He}/^4\text{He}$ ratios indicating a large contribution of mantle-derived helium, while the low $^3\text{He}/^4\text{He}$ ratio of the Susaki sample indicates crustal helium, enriched in radiogenic ^4He . Combining the above ratios with the $^4\text{He}/^{20}\text{Ne}$ ratios, it is shown