

Sr AND Nd ISOTOPIC DETERMINATIONS IN THREE MOLDANUBIAN GRANULITE MASSIFS IN SOUTHERN BOHEMIA

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We present Sr and Nd isotopic data of eight granulite samples from three Moldanubian granulite massifs in southern Bohemia: Blanský Les, Náměšť, and Lišov.

Sample	Description	SiO ₂ [%]	$\epsilon_{Nd}^{(*)}$	T _{DM} [Ga]	⁸⁷ Sr/ ⁸⁶ Sr _i
Blanský Les					
32	pyriclasite	56	-4.8	1.5	0.71259
36	enderbitic granulite	63	-6.1	1.5	0.71266
26	enderbitic granulite	68	-5.5	-	0.70996
26b			-5.5	-	
Náměšť					
GM-12	granulite	68	-7.0	1.5	0.71473
GM-6	granulitic gneiss	76	-4.8	-	0.76400
Lišov					
105	granulite				
		54	-2.3	1.2	0.70627
98	pyribole	76	-4.9	1.3	0.73056
98b			-4.6	1.3	
102	melagranulite	76	-5.3	1.6	0.73005

* 338Ma, 1s precision $\epsilon_{Nd}^{(*)}$ 0.15, ⁸⁷Sr/⁸⁶Sr_i 0.003%

nitial values have been calculated at 338 Ma, the age for early Carboniferous (?) (Namurian) development of granulite facies assemblages in southern Bohemia (Aftalion et al., 1989). The data show radiogenic ⁸⁷Sr/⁸⁶Sr_i values for the felsic granulites at the time of granulite metamorphism, indicating that these samples have experienced a prolonged crustal residence. Initial ϵ_{Nd} variations do not correlate with SiO₂ content, and presumably reveal the isotopic heterogeneity resulting from the prolonged crustal residence of the protoliths or the rocks themselves. The neodymium depleted mantle model ages (calculated using the equation of DePaolo), range between 1.2–1.5 Ga, corresponding to the “pan-European” age (ca. 1.5 Ga) found in many European Hercynian Massifs. These ages are model dependent, and imply that the Sm/Nd ratio did not change during granulite facies metamorphism, and that the rock or protolith was derived from the depleted mantle. Because of these assumptions, we suggest that the model ages of this preliminary study should be considered with caution.

Reference

Aftalion et al. (1989): N. Jb. Miner. Mh. H. 4,145–152

ZIRCON GROWTH AND RECRYSTALLIZATION DURING GRANULITE FACIES METAMORPHISM IN THE IVREA ZONE (SOUTHERN ALPS): A COMBINED CATHODOLUMINESCENCE AND ION MICROPROBE STUDY

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The U/Pb dating of zircon is indispensable for revealing the magmatic and metamorphic history of high-grade metamorphic terrains. It requires a proper understanding of the various internal growth