

Sources of materials for hydrothermal veins of Saranovsky chromite deposit (Middle Urals): Rb-Sr and Sm-Nd data

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Saranovsky chromite deposit (Middle Urals) is known for its chromium hydrothermal minerals [1]. The belt of chromite-bearing layered intrusions forms part of Kvar Kushsky anticlinorium [1] [5]. Dunites zircon age varies from 1756 up to 464.1 and 305.3 Ma in Southern and Northern massifs, correspondingly [3]. Carbonate veins containing different silicate and ore minerals are considered to be the result of diabase dykes injection into ultramafic body [1].

8 mineral monofractions (Rb-Sr) and 4 monofractions (Sm-Nd) were studied. Samples were taken from rutile-dolomite vein, chlorite-titanite-calcite and uvarovite-calcite associations on chromite ore and millerite-calcite vein in altered diabase, reported in [1] [6].

⁸⁷Sr/⁸⁶Sr scatter in 4 carbonate samples of different veins (calcite, dolomite) from 0.7086 to 0.7171 indicates the ancient source of sedimentary carbonaceous rocks. Erochrone (MSWD=3,7) for 3 silicate mineral samples (chlorites and titanite) has the age of 244.2±4.7 Ma and ⁸⁷Sr/⁸⁶Sr_i (Sr_i) =0.7094. Erochrone of calcite-uvarovite association yields the age of 110.9±3.8 Ma and Sr_i=0.7119. However, recalculation of uvarovite Sr_i at the age of basic zircon formation of 440 Ma [3] gives the value Sr_i=0.7024, which can point to spatially adjacent mixed rift-related magmatic source [2]. Obtained relations comply to 495 and 178 Ma (titanite-uvarovite ¹⁴³Nd/¹⁴⁴Nd_i=0.511734 and rutile-dolomite ¹⁴³Nd/¹⁴⁴Nd_i=0.511852, respectively).

By using close in age and genesis formations of Bashkirian meganticlinorium and data on vulcanites of Western Ural slope [2] [4], we can say that the sources of material and fluid were metasomatized pre-cambrian sedimentary rocks as well as probably heterochronous rift-related intraplate formations, to which Sarany group of massifs belongs.

[1] Ivanov (1997). 123p. [2] Karpukhina et al. (2001) *Petrology* **9**(5), 415-436. [3] Krasnobaev et al. *Doklady Earth Sciences* **451**(2), 692-697. [4] Krupenin et al. (2012) *Ezhegodnik-2011*, **159**, 163-168. [5] Perevozchikov et al. (1998) 12-14. [6] Shagalov (2010) 360-362.