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# Chromite RI 3-1: New reference material for EPMA and LA-ICP-MS

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Modern in-situ analytical techniques still prefer matrix-matched reference materials for accurate quantitative analysis. Main requirement for such material is the homogeneity at the micrometre scale for major, minor, and trace elements. In this study, we present a reference material of chromium-rich chromite (62.4 wt% $Cr_2O_3$), designated RI 3-1, from the Rai-Iz ore deposit, which is associated with subduction-related ophiolite complexes in the Polar Urals.

The sample was crushed, and 1-2 mm fragments of pure chromite (Chr) were carefully selected under a binocular microscope. A polished mount containing 44 Chr fragments was prepared for EPMA and LA-ICP-MS analyses (see Fig. 1). Each fragment mainly consists of a clear, crack-free domain without inclusions. These specific areas of the 44 fragments were initially examined using EPMA and LA-ICP-MS at ISTerre, University of Grenoble Alpes, revealing a homogenous distribution of most elements at the micrometer scale. There are very rare local heterogeneities (zoning, inclusions) at the 10-100 µm scale which can be easily avoided.

Eight EPMA laboratories and three LA-ICP-MS laboratories took part in a comprehensive round-robin test of the prepared mount. The results from this study will be presented at the conference.

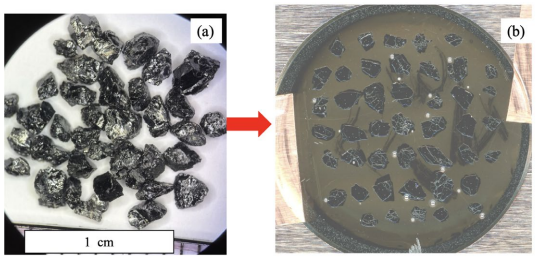


Fig1.(a) Chr fragments (1-2mm); (b) One inch polished epoxy mount