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Preliminary Data on new Olivine reference material MongOL Sh11-2 for *in-situ* microanalysis

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A new olivine reference material - MongOL Sh11-2 - for in-situ analysis has been prepared from a central portion of a large (20x20x10 cm) peridotite xenolith from a ~0.5 Ga old basaltic breccia at Shavaryn-Tsaram, Tariat region, central Mongolia. The xenolith is a fertile mantle lherzolite with minimal signs of alteration during and after its transport to the surface. About 10 g of 0.5-2 mm gem quality olivine fragments were separated under binocular microscope and analysed by EPMA, LA-ICP-MS, SIMS and bulk analytical methods (ID ICP-MS for Mg and Fe, XRF, ICP-MS) in six laboratories worldwide for major and trace elements. The results show that the olivine fragments are homogeneous in Mg, Fe , Si and seventeen minor and trace elements. Minor inhomogeneity of ±9-13 % (2RSE) is observed for Al and P.

Preliminary reference and information concentrations ±2SE are (oxides in wt%, elements in mg g^{-1}): SiO_2 =40.74±0.29, MgO=48.79±0.09, FeO=10.17±0.02, Li= 2.19±0.17, Na=127±10, Al=238±20, Ca=688±9, Sc= 3.4±0.3, Ti=39±3, V=5.7±0.3, Cr=125±3, Mn=1117±15, Co= 148±4, Ni=2822±29, Cu=1.13±0.07, Zn=56±1.8, Y=0.075±0.005, P=67±9, Er=0.013±0.0007, Tm=0.003±0.0002, Yb=0.029±0.0009, Lu=0.007±0.0003.