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| **Supplementary Table S5.** True density calculations for the Khopoli olivine gabbros |
| Sample No. | Wt.(g) of empty pycnometer, **M0** | Wt.(g) of pycnometer + granular sample filling about half the pycnometer volume, **M1** | Wt.(g) of sample, **Ms**= M1 – M0 | Wt.(g) of pycnometer + sample + water added to make up the full volume, **M2** | Wt.(g) of added water, **M'H2O** = M2 – M1 | Wt.(g) of pycnometer filled completely with water (no sample), **M3** | Wt.(g) of water when fully filling pycnometer, **MH2O** = M3 – M0 | Vol.(cm3) of added water (of mass M'H2O) to make up full volume, **V'H2O** = M'H2O/density  | Vol.(cm3) of water fully filling up pycnometer, **V** = MH2O/ density | Vol.(cm3) of sample, **Vs** = V – V'H2O  | **Density** (g/cm3) **of sample** = mass/vol. = Ms/Vs |
|
| KP22/01 | 23.26 | 79.93 | 56.67 | 113.21 | 33.28 | 74.64 | 51.38 | 33.28 | 51.38 | 18.10 | 3.13 |
| KP22/02 | 28.48 | 88.14 | 59.66 | 118.30 | 30.16 | 78.83 | 50.35 | 30.16 | 50.35 | 20.19 | 2.95 |
| KP22/03 | 26.68 | 92.21 | 65.53 | 120.47 | 28.26 | 76.86 | 50.18 | 28.26 | 50.18 | 21.92 | 2.99 |
| KP22/04 | 26.14 | 86.08 | 59.94 | 117.00 | 30.92 | 77.12 | 50.98 | 30.92 | 50.98 | 20.06 | 2.99 |
| KP22/05 | 25.70 | 81.71 | 56.01 | 113.10 | 31.39 | 75.97 | 50.27 | 31.39 | 50.27 | 18.88 | 2.97 |
| KP22/06 | 25.58 | 85.56 | 59.98 | 115.50 | 29.94 | 75.53 | 49.95 | 29.94 | 49.95 | 20.01 | 3.00 |
| KP22/07 | 26.93 | 91.40 | 64.47 | 120.77 | 29.37 | 78.11 | 51.18 | 29.37 | 51.18 | 21.81 | 2.96 |
| KP22/08 | 24.88 | 83.85 | 58.97 | 113.96 | 30.11 | 74.68 | 49.80 | 30.11 | 49.80 | 19.69 | 2.99 |
| KP22/09 | 28.51 | 82.38 | 53.87 | 114.27 | 31.89 | 78.81 | 50.30 | 31.89 | 50.30 | 18.41 | 2.93 |

Note: The various reported and calculated values have been rounded off to two decimal places. Estimated uncertainties on the true density values are on the order of 1-2%.