**Table S1.** Conditions for electron microprobe analyses (sample 2).

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| --- | --- | --- | --- |
| **Elements** | **X-ray line** | **Crystal** | **Standard** |
| Mg | *K*α1 | TAP | MgO |
| Al | *K*α1 | TAP | Al2O3 |
| Mn | *K*α1 | LIF | MnO |
| Fe | *K*α1 | LIF | Fe2O3 |
| Er | *L*β1 | LIF | ErP5O14 |
| Yb | *L*α1 | LIF | YbP5O14 |
| Dy | *L*β1 | LIF | DyP5O14 |
| Gd | *L*β1 | LIF | GdP5O14 |
| Ca | *K*α1 | PET | CaSiO3 |
| Y | *L*α1 | PET | (Zr, Y)O2 |
| Si | *K*α1 | PET | CaSiO3 |