**File 3.** *Microprobe analyses of feldspar from the Datong lamprophyres*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Spot# | EM1-1 | EM3-1 | EM3-2 | EM3-3 | EM5-1 | EM5-2 | EM6-1 | EM7-1 | EM7-2 | EM9-1 |
| SiO2 | 64.0 | 64.5 | 63.8 | 63.0 | 59.6 | 64.3 | 63.6 | 63.9 | 63.3 | 63.7 |
| TiO2 | 0.09 | 0.06 | 0.04 | 0.05 | 0.19 | bdl | bdl | 0.04 | bdl | 0.06 |
| Al2O3 | 18.1 | 18.0 | 18.2 | 18.0 | 17.1 | 17.8 | 17.8 | 18.0 | 18.9 | 18.4 |
| Cr2O3 | bdl | bdl | bdl | 0.03 | bdl | bdl | bdl | bdl | bdl | 0.03 |
| FeOtot | 1.28 | 1.03 | 0.70 | 1.34 | 2.85 | 1.27 | 1.31 | 1.09 | 0.45 | 1.21 |
| MnO | bdl | 0.04 | 0.03 | bdl | bdl | bdl | bdl | bdl | bdl | bdl |
| MgO | bdl | bdl | bdl | bdl | bdl | bdl | bdl | bdl | bdl | bdl |
| CaO | 0.05 | 0.03 | bdl | bdl | bdl | bdl | bdl | 0.05 | 0.05 | 0.16 |
| Na2O | 0.87 | 0.09 | 0.09 | 0.44 | 0.98 | 0.31 | 0.37 | 0.20 | 0.28 | 0.33 |
| K2O | 15.3 | 16.9 | 16.7 | 16.1 | 14.4 | 16.8 | 16.4 | 16.6 | 16.6 | 15.3 |
| NiO | bdl | bdl | 0.04 | bdl | 0.07 | 0.04 | 0.06 | 0.06 | 0.10 | 0.06 |
| Total | 99.64 | 100.62 | 99.59 | 99.02 | 95.17 | 100.47 | 99.61 | 99.92 | 99.65 | 99.18 |
|  |  |  |  |  |  |  |  |  |  |  |
| *Based on 8 oxygens* | | | |  |  |  |  |  |  |  |
| Si | 2.969 | 2.979 | 2.977 | 2.96 | 2.918 | 2.98 | 2.972 | 2.974 | 2.954 | 2.966 |
| Ti4+ | 0.003 | 0.002 | 0.001 | 0.002 | 0.007 | 0 | 0 | 0.001 | 0 | 0.002 |
| Al | 0.99 | 0.982 | 0.999 | 0.995 | 0.986 | 0.97 | 0.981 | 0.987 | 1.037 | 1.008 |
| Fe3+ | 0.05 | 0.04 | 0.027 | 0.053 | 0.117 | 0.049 | 0.051 | 0.042 | 0.018 | 0.047 |
| Ca | 0.002 | 0.001 | 0 | 0 | 0 | 0 | 0 | 0.002 | 0.002 | 0.008 |
| Na | 0.078 | 0.008 | 0.008 | 0.04 | 0.093 | 0.028 | 0.034 | 0.018 | 0.025 | 0.03 |
| K | 0.907 | 0.995 | 0.995 | 0.967 | 0.897 | 0.995 | 0.98 | 0.983 | 0.989 | 0.908 |
| ∑ | 4.999 | 5.007 | 5.007 | 5.017 | 5.018 | 5.022 | 5.018 | 5.007 | 5.025 | 4.969 |
|  |  |  |  |  |  |  |  |  |  |  |
| An | 0.2 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.2 | 0.8 |
| Ab | 7.9 | 0.8 | 0.8 | 4.0 | 9.4 | 2.7 | 3.4 | 1.8 | 2.5 | 3.2 |
| Or | 91.9 | 99.1 | 99.2 | 96.0 | 90.6 | 97.3 | 96.6 | 98.0 | 97.3 | 96.0 |