|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Element/ Line** | **Crystal** | **Interference corrections** | **Counting times peak/background, seconds** | **typical detection limit, wt%,  99% confidence** | **typical precision, wt%, 1 sigma** | **Standard reference materials** | **Source** |
| F Ka | PC0 | Fe, Ce | 60 / 50 | 0.029 | 0.030 | Apatite, Durango\* | 3 |
| Na Ka | TAP |  | 20 / 2x10 | 0.014 | 0.008 | Anorthoclase, Kakanui, NMNH 133868 | 1 |
| Si Ka | TAP |  | 20 / 2x10 | 0.008 | 0.006 | Wollastonite, natural | 2 |
| P Ka | LPET | Ca | 20 / 10 | 0.013 | 0.066 | Apatite, Durango | 4 |
| S Ka | LPET |  | 40 / 2x20 | 0.005 | 0.003 | Celestine SrSO4 Yate, England | 4 |
| Cl Ka | LPET |  | 30 / 2x15 | 0.006 | 0.004 | Tugtupite | 5 |
| Ca Ka | LPET |  | 10 / 2x3 | 0.019 | 0.079 | Apatite, Durango | 3 |
| Fe Ka | LLIF |  | 20 / 2x10 | 0.025 | 0.012 | Specularite, Haile Moor UK | 4 |
| As La | TAP |  | 30 / 2x15 | 0.019 | 0.009 | GaAs, synthetic | 4 |
| Sr La | TAP | Si | 60 / 2x30 | 0.014 | 0.009 | Celestine SrSO4 Yate, England | 4 |
| La La | LPET | Nd | 60 / 2x30 | 0.019 | 0.010 | LaPO4, synthetic | 6 |
| Ce La | LLIF |  | 60 / 2x30 | 0.036 | 0.022 | CePO4, synthetic | 6 |
| Nd La | LLIF | Ce | 60 / 2x30 | 0.034 | 0.018 | NdPO4, synthetic | 6 |
| Th Ma | LPET |  | 70 / 2x35 | 0.020 | 0.010 | Huttonite, synthetic | 7 |

Table: Electron Microprobe conditions for apatite analysis.

1) Jarosewich et al.[37](#_ENREF_37) 2) UTas in house 3) U Melbourne 4) P&H Developments Ltd., UK 5) Astimex Standards Ltd, Toronto 6) Cherniak et al.[45](#_ENREF_45) 7) J. Hanchar, Memorial University. \*Durango apatite used for F calibration was oriented with the beam perpendicular to the C axis.