TABLE A1. EMPA SETTINGS FOR ORTHOCLASE AND ALBITE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Channel | Wave | Crystal | Standard | Peak/Background | Detection Limit µg/g |
| Al | 1 | Ka | TAP | A\_Sanidin | 16/8 | 100 |
| Na | 2 | Ka | TAP | A\_Albit | 16/8 | 100 |
| K | 3 | Ka | PETJ | A\_Sanidin | 16/8 | 100 |
| Ti | 4 | Ka | PETH | A\_SrTiO3 | 30/15 | 100 |
| Si | 1 | Ka | TAP | A\_Sanidin | 16/8 | 100 |
| Mg | 2 | Ka | TAP | A\_Diopsid | 30/15 | 100 |
| Ca | 3 | Ka | PETJ | A\_Plagioklas | 16/8 | 100 |
| Ba | 4 | La | PETH | A\_Baryt | 30/15 | 150 |
| Fe | 3 | Ka | LIF | A\_Haematit | 30/15 | 150 |
| Sr | 4 | La | PETH | A\_SrTiO3 | 30/15 | 250 |

TABLE A2. EMPA SETTINGS FOR BIOTITE AND AMPHIBOLE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Channel | Wave | Crystal | Standard | Peak/Background | Detection Limit µg/g |
| F | 1 | Ka | LDE1 | Topas\_Utah | 30/15 | 300 |
| Na | 2 | Ka | TAP | A\_Albit | 10/5 | 150 |
| K | 3 | Ka | PETJ | A\_Sanidin | 16/8 | 100 |
| Cl | 4 | Ka | PETH | A\_Tugtupit | 30/15 | 50 |
| Mg | 2 | Ka | TAP | A\_Diopsid | 16/8 | 100 |
| Ca | 3 | Ka | PETJ | A\_Diopsid | 30/15 | 100 |
| Ti | 4 | Ka | PETH | A\_SrTiO3 | 16/8 | 100 |
| Al | 2 | Ka | TAP | S\_Al2O3 | 16/8 | 100 |
| Mn | 3 | Ka | PETJ | A\_Rhodonit | 16/8 | 200 |
| Ba | 4 | La | PETH | A\_Baryt | 16/8 | 200 |
| Si | 2 | La | TAP | A\_Diopsid | 16/8 | 150 |
| Fe | 4 | La | LIFH | A\_Haematit | 16/8 | 150 |

TABLE A3. EMPA SETTINGS FOR CANCRINITE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Channel | Wave | Chrystal | Standard | Peak/Background | Detection Limit µg/g |
| Si | 1 | Ka | TAP | A\_Albit | 16/8 | 250 |
| Na | 2 | Ka | TAP | A\_Albit | 6/3 | 400 |
| K | 3 | Ka | PETJ | A\_Sanidin | 16/8 | 200 |
| Cl | 4 | Ka | PETH | A\_Tugtupit | 30/15 | 100 |
| Al | 1 | Ka | TAP | A\_Albit | 16/8 | 200 |
| Mg | 2 | Ka | TAP | A\_Diopsid | 16/8 | 200 |
| Ca | 3 | Ka | PETJ | A\_Bustamit | 16/8 | 200 |
| Ti | 4 | Ka | PETH | A\_SrTiO3 | 16/8 | 200 |
| Fe | 3 | Ka | LIF | A\_Haematit | 16/8 | 500 |
| S | 4 | Ka | PETH | A\_Baryt | 16/8 | 250 |

TABLE A4. EMPA SETTINGS FOR GARNET AND TITANITE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Channel | Wave | Crystal | Standard | Peak/Background | Detection Limit µg/g |
| F | 1 | Ka | LDE1 | Topas\_Utah | 30/15 | 350 |
| Na | 2 | Ka | TAP | A\_Albit | 16/8 | 100 |
| Ti | 3 | Ka | PETJ | A\_SrTiO3 | 16/8 | 150 |
| Fe | 4 | Ka | LIFH | A\_Hematit  | 16/8 | 150 |
| Al | 1 | Ka | TAP | S\_Al2O3 | 16/8 | 100 |
| Mg | 2 | Ka | TAP | A\_Diopsid | 16/8 | 100 |
| Ca | 3 | Ka | PETJ | A\_Diopsid | 16/8 | 150 |
| Ce | 4 | La | LIFH | REE\_Ce | 16/8 | 400 |
| Si | 1 | Ka | TAP | A\_Diopsid | 16/8 | 150 |
| Y | 2 | La | PETJ | A\_YAG | 30/15 | 350 |
| Nb | 3 | La | PETJ | S\_LiNb2O6 | 16/8 | 450 |
| Zr | 3 | La | PETJ | A\_ZrO2 | 16/8 | 500 |
| Mn | 3 | Ka | PETJ | A\_Rhodonit | 16/8 | 200 |

TABLE A5. EMPA SETTINGS FOR Fe–Ti OXIDES

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Channel | Wave | Crystal | Standard | Peak/Background | Detection Limit µg/g |
| Si | 1 | Ka | TAP | A\_Diopsid20 | 16/8 | 100 |
| Al | 2 | Ka | TAP | S\_Al2O320 | 16/8 | 100 |
| Cr | 3 | Ka | PETJ | M\_Cr20 | 30/15 | 100 |
| V | 4 | Ka | LIFH | M\_V20 | 16/8 | 100 |
| Mg | 2 | Ka | TAP | A\_Periclase20 | 16/8 | 100 |
| Ti | 3 | Ka | PETJ | A\_SrTiO320 | 16/8 | 100 |
| Mn | 4 | Ka | LIFH | A\_Bustamit20 | 30/15 | 100 |
| Fe | 4 | Ka | LIFH | A\_Haematit20 | 16/8 | 100 |
| Zn | 4 | Ka | LIFH | M\_Zn20 | 16/8 | 150 |

TABLE A6. EMPA SETTINGS FOR CLINOPYROXENE AND OLIVINE

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Element | Channel | Wave | Crystal | Standard | Peak/Background | Detection Limit µg/g |
| Na | 2 | Ka | TAP | A\_Albit | 30/15 | 100 |
| K | 3 | Ka | PETJ | A\_Sanidin | 16/8 | 100 |
| Ti | 4 | Ka | PETH | A\_SrTiO3 | 16/8 | 100 |
| Mg | 2 | Ka | TAP | A\_Diopsid | 16/8 | 100 |
| Ca | 3 | Ka | PETJ | A\_Diopsid | 16/8 | 100 |
| Al | 2 | Ka | TAP | S\_Al2O3 | 16/8 | 150 |
| Mn | 3 | Ka | PETJ | A\_Rhodonit | 16/8 | 100 |
| Zr | 4 | La | PETH | A\_ZrO2 | 30/15 | 200 |
| Si | 2 | Ka | TAP | A\_Diopsid | 16/8 | 100 |
| Fe | 3 | Ka | LIF | A\_Haematit | 16/8 | 200 |
| Cr | 4 | Ka | LIFH | M\_Cr | 16/8 | 200 |