Supplementary Material

The Serra Branca Amazonite pegmatite of the Vieirópolis Pegmatite Field, Paraíba, Brazil – a new and unusual megacrystic amazonite deposit

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TABLE S1. LIST OF SAMPLES AND THEIR DESCRIPTIONS

|  |  |  |
| --- | --- | --- |
| Sample label | Location in the Serra Branca amazonite pegmatite | Description |
| AM-01 | Amazonite zone | Amazonite of the first generation from the upper part of amazonite zone |
| AM-02 | Amazonite zone | Amazonite of the first generation from the center part of the amazonite zone  |
| AM-03 | Amazonite zone | Amazonite of the first generation from the lower part of the amazonite zone  |
| AM-04 | Albite zone | Saccharoidal albite from the main body |
| AMZ-28A | Albite zone | Saccharoidal albite from the main body near the younger minor unit |
| AMZ-28B | Younger minor unit | Cleavelandite (second generation albite) |
| AMZ-28C | Younger minor unit | Second generation quartz  |
| AMZ-28D | Younger minor unit | Second generation amazonite |
| AMZ-31 | Amazonite zone | Quartz from the upper part in amazonite zone |
| AMZ-32 | Amazonite zone | Quartz from the center part in amazonite zone |
| AMZ-33 | Amazonite zone | Quartz from the lower part in amazonite zone |
| AMZ-34 | Albite zone | Quartz from the albite zone |
| AMZ-35 | Amazonite zone | Large biotite form upper part of amazonite zone |
| AMZ-83.1 | Bulk pegmatite | Transversal profile of the Serra Branca Amazonite pegmatite with both amazonite and albite zone |
| AMZ-83.2 | Bulk pegmatite | Transversal profile of the Serra Branca Amazonite pegmatite with both amazonite and albite zone |
| AMZ-83.3 | Bulk pegmatite | Transversal profile of the Serra Branca Amazonite pegmatite with both amazonite and albite zone |
| AMZ-84 | Amazonite zone | Amazonite zone separated from the profile of the AMZ-83 |
| AMZ-85 | Albite zone | Albite zone separated from the profile of the AMZ-83 |
| AMZ-86 | Amazonite zone | Amazonite of the first generation from the upper part in amazonite zone  |
| AMZ-87 | Amazonite zone | Amazonite of the first generation from the center part in the amazonite zone  |
| AMZ-88 | Amazonite zone | Amazonite of the first generation from the lower part in the amazonite zone  |

TABLE S2. SERRA BRANCA AMAZONITE PEGMATITE WHOLE-ROCK AND THE AMAZONITE AND ALBITE ZONES CHEMISTRY

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | AMZ-83.1 | AMZ-83.2 | AMZ-83.3 | AMZ-84.1 | AMZ-84.2 | AMZ-84.3 | AMZ-85 |
| SiO2, wt.% | 72.56 | 72.47 | 72.21 | 73.78 | 73.39 | 73.74 | 72.86 |
| Al2O3 | 14.88 | 14.87 | 15.01 | 13.45 | 13.61 | 16.13 | 16.33 |
| Fe2O3 | 0.29 | 0.28 | 0.28 | 0.69 | 0.68 | 0.3 | 0.36 |
| MgO | 0.04 | 0.02 | 0.03 | 0.08 | 0.08 | 0.01 | 0.02 |
| CaO | 0.04 | 0.04 | 0.04 | 0.06 | 0.07 | 0.03 | 0.06 |
| Na2O | 3.31 | 3.42 | 3.4 | 2.84 | 2.92 | 9.33 | 9.47 |
| K2O | 8.36 | 8.26 | 8.31 | 7.78 | 7.88 | 0.19 | 0.29 |
| TiO2 | 0.02 | 0.01 | 0.01 | 0.03 | 0.03 | <0.01 | <0.01 |
| P2O5 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| MnO | 0.02 | 0.02 | 0.02 | 0.07 | 0.07 | 0.01 | 0.17 |
| Cr2O3 | 0.01 | 0.01 | 0.013 | 0.027 | 0.028 | 0.009 | 0.014 |
| F | 0.03 | 0.02 | 0.02 | 0.05 | 0.05 | <0.01 | 0.01 |
| Ba, ppm | 415 | 400 | 407 | 386 | 400 | 13 | 48 |
| Sc | 1 | 2 | 1 | 5 | 5 | <1 | 3 |
| Be | 50 | 42 | 40 | 112 | 135 | 22 | 195 |
| Cs | 131.8 | 129.4 | 129.5 | 139.6 | 138.9 | 2.2 | 7.1 |
| Hf | 2.4 | 14.5 | 2.3 | 6 | 7.5 | 17.1 | 23.4 |
| Nb | 56.5 | 75.5 | 34 | 118.9 | 107.9 | 53 | 179.4 |
| Rb | *3004* | *2994* | *3016* | *2745* | *2558* | 18 | 45.8 |
| Sr | 217.3 | 210.5 | 213.4 | 207.6 | 212 | 92.2 | 79.9 |
| Ta | 8.2 | 11.5 | 5.6 | 16.8 | 16.1 | 3.3 | 10.9 |
| Th | 2.6 | 2.7 | 2.3 | 6.2 | 5.6 | 7.8 | 14.1 |
| U | 7.2 | 9.7 | 5.2 | 17 | 17.1 | 20.2 | 7.9 |
| Zr | 17.5 | 117.8 | 12.1 | 15.6 | 19.7 | 130.6 | 148.7 |
| Y | 7.1 | 7.3 | 5.7 | 12.4 | 12.2 | 6.5 | 9.2 |
| Pb | 193 | 189.7 | 185.6 | 356 | 375.6 | 63.7 | 80.1 |
| Tl | 0.2 | 0.2 | 0.2 | 1.5 | 1.6 | <0.1 | 0.2 |
| La | 1 | 0.9 | 0.6 | 1.1 | 1.1 | 3.9 | 2 |
| Ce | 1.5 | 2.1 | 1.4 | 2.7 | 2.5 | 8.5 | 4.6 |
| Pr | 0.23 | 0.31 | 0.17 | 0.35 | 0.35 | 0.89 | 0.49 |
| Nd | 0.8 | 1.1 | 0.8 | 1.4 | 1.1 | 2.7 | 1.5 |
| Sm | 0.32 | 0.39 | 0.29 | 0.45 | 0.5 | 0.54 | 0.52 |
| Eu | 0.1 | 0.1 | 0.09 | 0.14 | 0.12 | 0.07 | 0.08 |
| Gd | 0.42 | 0.48 | 0.35 | 0.75 | 0.72 | 0.52 | 0.62 |
| Tb | 0.09 | 0.08 | 0.07 | 0.15 | 0.16 | 0.09 | 0.14 |
| Dy | 0.57 | 0.62 | 0.45 | 1.06 | 1.17 | 0.56 | 0.9 |
| Ho | 0.12 | 0.13 | 0.1 | 0.25 | 0.26 | 0.11 | 0.23 |
| Er | 0.46 | 0.55 | 0.33 | 0.92 | 0.97 | 0.4 | 0.87 |
| Tm | 0.08 | 0.12 | 0.07 | 0.2 | 0.19 | 0.09 | 0.19 |
| Yb | 0.8 | 1.21 | 0.54 | 1.94 | 1.92 | 0.74 | 1.87 |
| Lu | 0.13 | 0.23 | 0.11 | 0.35 | 0.34 | 0.14 | 0.36 |

*Italic values* – obtained with FRX. The major chemistry obtained with ICP-OES and the trace elements including REE with ICP-MS.