**Table S3:** Chemical analyses of major (wt. %), trace and rare earth elements (ppm) of meta-mafic rocks from the eastern Rhodope Massif. Location of the samples in Fig. 1.

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Sample R1 R2 R3 R4 R5 R6 R7 R8 R9 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rock type grt-amph amph amph amph grt-amph amph amph amph grt-amph

Group High-Ti High-Ti High-Ti High-Ti High-Ti Low-Ti Low-Ti High-Ti High-Ti

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SiO2  |  49.42 |  51.55 |  59.22 |  47.36 |  42.93 |  52.46 |  46.52 |  46.92 |  50.55 |
| TiO2 |  1.81 |  1.24  |  1.04 |  1.82  |  3.76 |  0.72 |  0.58 |  2.52 |  1.61 |
| Al2O3 |  12.97 |  14.83  |  16.29  |  13.86 |  13.04 |  15.42 |  21.59 |  13.13 |  15.43 |
| Fe2O3 |  13.65 |  9.88  |  5.82 |  14.17  |  18.49 |  9.48 |  6.23 |  15.57 |  10.51 |
| MnO |  0.18 |  0.16  |  0.11 |  0.21  |  0.29 |  0.16 |  0.11 |  0.20 |  0.16 |
| MgO |  6.94 |  7.15 |  4.20 |  7.59  |  5.86 |  4.73 |  5.70 |  5.32 |  6.32 |
| CaO |  9.76 |  8.84  |  5.84 |  10.32  |  6.91 |  11.79 |  13.61 |  10.19 |  9.02 |
| Na2O |  2.90 |  4.18  |  6.06  |  2.77  |  1.63 |  1.95 |  1.65 |  2.72 |  3.43 |
| K2O |  0.32 |  0.44  |  0.32  |  0.36 |  0.38 |  0.67 |  0.51 |  0.63 |  0.22 |
| P2O5 |  0.16 |  0.11  |  0.21 |  0.17  |  0.10 |  0.19 |  0.03 |  0.27 |  0.17 |
| Cr2O3 |  0.02 |  0.03  |  0.02 |  0.03  |  0.01 |  0.03 |  0.05 |  0.01 |  0.05 |
| NiO  |  0.01 |  0.01  |  n.d.  |  0.01 |  n.d. |  0.01 |  0.01 |  n.d. |  0.02 |
| LOI |  1.55  |  1.11  |  0.72  |  1.04 |  6.13 |  1.66 |  2.55 |  1.67 |  1.69 |
| Total |  99.67 |  99.52  |  99.84 |  99.71 |  99.54 |  99.25 |  99.13 |  99.14 |  99.18 |
| Nb |  8 |  6  |  5 |  8  |  8 |  5.8 |  1.5 |  8.2 |  10.1 |
| Zr |  106 |  93  |  147 |  100  |  75 |  116 |  18 |  196 |  115 |
| Y  |  36  |  29  |  31 |  38 |  30 |  20.9 |  6.7 |  59.1 |  26.5 |
| Ta  |  1.40  |  1.18  |  2.04  |  1.30 |  0.79 |  3.71 |  4.04 |  2.18 |  3.34 |
| Rb |  7  |  5  |  5  |  7 |  14 |  14.6 |  15.2 |  8.4 |  8.3 |
| Sr |  92  |  167  |  180 |  120 |  99 |  550 |  216 |  92 |  169 |
| Ba  |  <9< |  36  |  135 |  20 |  46 |  142 |  83 |  72 |  27 |
| U |  2 |  3  |  3 |  2  |  2 |  <2< |  <2< |  <2< |  <2< |
| Th |  4 |  5  |  6 |  4  |  4 |  8 |  <2< |  3 |  3 |
| Pb |  21 |  12  |  8  |  14 |  6 |  22 |  6 |  11 |  6 |
| Hf |  5 |  4  |  5 |  4  |  4 |  3.24 |  0.33 |  5.36 |  3.36 |
| Sc |  52 |  40  |  22 |  50  |  108 |  n.a. |  n.a. |  n.a. |  n.a. |
| Cr |  111 |  192 |  82 |  201 |  55 |  169 |  315 |  52 |  357 |
| V |  409 |  277 |  167 |  421 |  819 |  232 |  217 |  425 |  240 |
| Ni |  58 |  47 |  35 |  76 |  11 |  58 |  88 |  39 |  173 |
| Ga |  20 |  19 |  14 |  19 |  23 |  19 |  16 |  22 |  17 |
| Zn |  115 |  60 |  31 |  111 |  101 |  165 |  149 |  237 |  131 |
| Cu |  56 |  22 |  12 |  32 |  48 |  n.a. |  n.a. |  n.a. |  n.a. |
| Co |  79 |  63 |  58 |  74 |  79 |  n.a. |  n.a. |  n.a. |  n.a. |
| La |  3.98 |  4.88 |  12.23 |  5.62 |  2.54 |  19.90 |  0.61 |  9.61 |  7.41 |
| Ce |  11.69 |  13.67 |  27.78 |  13.29 |  8.32 |  36.25 |  1.64 |  23.84 |  18.02 |
| Pr |  1.92 |  1.85 |  3.53 |  2.24 |  1.45 |  4.74 |  0.26 |  4.01 |  2.46 |
| Nd |  11.51 |  10.06 |  16.11 |  13.23 |  9.20 |  22.36 |  1.80 |  23.39 |  14.46 |
| Sm |  4.23 |  2.65 |  3.93 |  4.02 |  3.47 |  4.32 |  0.53 |  7.62 |  4.20 |
| Eu |  1.39 |  1.09 |  1.27 |  1.44 |  1.81 |  1.20 |  0.45 |  2.27 |  1.24 |
| Gd |  6.66 |  3.00 |  4.19 |  6.87 |  5.22 |  4.28 |  1.04 |  9.07 |  4.64 |
| Tb |  1.07 |  0.60 |  0.74 |  1.40 |  0.90 |  0.69 |  0.26 |  1.75 |  0.73 |
| Dy |  8.02 |  4.25 |  5.36 |  8.92 |  6.34 |  4.88 |  1.65 |  12.12 |  5.29 |
| Ho |  1.70 |  0.85 |  0.85 |  1.94 |  1.51 |  0.84 |  0.32 |  2.54 |  1.26 |
| Er |  5.35 |  2.49 |  2.92 |  5.78 |  4.38 |  3.01 |  1.39 |  7.22 |  3.38 |
| Tm |  0.82 |  0.38 |  0.39 |  0.89 |  0.63 |  0.33 |  0.14 |  1.09 |  0.47 |
| Yb |  5.21 |  2.51 |  2.96 |  5.74 |  3.98 |  2.09 |  1.01 |  7.76 |  3.37 |
| Lu |  0.69 |  0.39 |  0.44 |  0.62 |  0.58 |  0.39 |  0.21 |  1.06 |  0.43 |

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Major and trace elements determined by XRF; REE and Ta analyzed by LA-ICP-MS. n.a.= not analyzed;

n.d.= not determined. Abbreviations: grt-amph, garnet-amphibolite; amph, massive/banded amphibolite.

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Sample R10  R11 R12 R13 R14 R15 R16 R17 R18 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rock type d amph grt-amph amph grt-amph amph amph grt-amph amph

Group Low-Ti High-Ti High-Ti Low-Ti High-Ti High-Ti Low-Ti Low-Ti Low-Ti \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SiO2  |  38.98 |  47.65 |  49.07 |  50.72 |  48.64 |  53.35 |  46.81 |  58.96 |  55.26 |
| TiO2 |  0.03 |  1.46  |  1.81 |  0.26  |  1.76 |  1.47 |  0.42 |  0.43 |  0.26 |
| Al2O3 |  1.32 |  15.18  |  13.61  |  15.62 |  13.14 |  16.76 |  15.32 |  12.14 |  15.61 |
| Fe2O3 |  8.01 |  11.33  |  14.35 |  4.78  |  13.84 |  9.29 |  9.68 |  10.89 |  8.24 |
| MnO |  0.11 |  0.23  |  0.22 |  0.13  |  0.23 |  0.21 |  0.17 |  0.31 |  0.16 |
| MgO |  37.32 |  5.90 |  6.18 |  10.69  |  6.47 |  4.72 |  9.95 |  6.23 |  6.61 |
| CaO |  0.05 |  14.61  |  9.02 |  13.06  |  10.31 |  8.04 |  14.40 |  6.26 |  10.17 |
| Na2O |  n.d |  1.04  |  3.84  |  2.72  |  2.72 |  3.92 |  1.19 |  2.69 |  1.94 |
| K2O |  0.01 |  0.27  |  0.22  |  0.26 |  0.32 |  0.80 |  0.27 |  0.56 |  0.23 |
| P2O5 |  0.01 |  0.14  |  0.16 |  0.01  |  0.15 |  0.27 |  0.02 |  0.18 |  0.03 |
| Cr2O3 |  0.42 |  0.05  |  0.02 |  0.08  |  0.02 |  0.01 |  0.08 |  n.d. |  0.01 |
| NiO  |  0.25 |  0.02  |  0.01  |  0.01 |  0.01 |  0.01 |  0.01 |  n.d. |  n.d. |
| LOI |  12.56  |  1.58  |  0.84  |  1.77 |  0.79 |  1.38 |  2.06 |  1.16 |  1.81 |
| Total |  99.07 |  99.45  |  99.35 |  100.10 |  98.38 |  100.22 |  100.37 |  99.81 |  100.33 |
| Nb |  10 |  4  |  9 |  0.20  |  8 |  6 |  3 |  7 |  3 |
| Zr |  22 |  98  |  111 |  6  |  99 |  160 |  12 |  22 |  30 |
| Y  |  7  |  32  |  36 |  8 |  36 |  43 |  12 |  18 |  13 |
| Ta  |  n.d  |  n.d  |  n.d.  |  0.04  |  n.d.  |  1.37 |  1.24 |  2.48 |  1.76 |
| Rb |  4  |  7  |  6  |  3 |  7 |  16 |  7 |  12 |  4 |
| Sr |  3  |  283  |  105 |  392 |  108 |  297 |  78 |  59 |  100 |
| Ba  |  25 |  <9<  |  <9<  |  57 |  9 |  529 |  <9< |  45 |  28 |
| U |  <2< |  2  |  <2< |  3  |  <2< |  2 |  3 |  2 |  <2< |
| Th |  <2< |  5  |  <2< |  0.08  |  3 |  4 |  4 |  3 |  3 |
| Pb |  5 |  6  |  3  |  2 |  <2< |  9 |  24 |  20 |  19 |
| Hf |  <1< |  3  |  7 |  0.24  |  3 |  6 |  3 |  4 |  3 |
| Sc |  36 |  29  |  58 |  37  |  58 |  29 |  27 |  42 |  32 |
| Cr | 2756 |  304 |  153 |  483 |  138 |  72 |  472 |  27 |  50 |
| V |  50 |  291 |  433 |  140 |  430 |  201 |  301 |  299 |  226 |
| Ni | 1401 |  139 |  68 |  90 |  54 |  48 |  70 |  9 |  23 |
| Ga |  6 |  20 |  21 |  11 |  21 |  20 |  13 |  12 |  14 |
| Zn |  39 |  69 |  114 |  34 |  126 |  83 |  64 |  87 |  61 |
| Cu |  <2< |  106 |  69 |  9 |  67 |  45 |  82 |  9 |  76 |
| Co |  142 |  46 |  50 |  35 |  44 |  62 |  72 |  88 |  88 |
| La |  <4< |  8 |  7 |  0.40 |  5 |  11.26 |  0.86 |  1.33 |  1.67 |
| Ce |  <3< |  21 |  18 |  1.08 |  21 |  28.48 |  0.87 |  3.25 |  3.61 |
| Pr |  n.d. |  n.d. |  n.d. |  0.22 |  n.d. |  4.52 |  0.30 |  0.48 |  0.42 |
| Nd |  <4< |  13 |  8 |  1.33 |  14 |  21.73 |  2.05 |  2.46 |  2.30 |
| Sm |  n.d. |  n.d. |  n.d. |  0.50 |  n.d. |  6.37 |  0.71 |  0.99 |  0.86 |
| Eu |  n.d. |  n.d. |  n.d. |  0.46 |  n.d. |  2.02 |  0.34 |  0.44 |  0.34 |
| Gd |  n.d. |  n.d. |  n.d. |  1.28 |  n.d. |  8.58 |  1.11 |  1.80 |  1.50 |
| Tb |  n.d. |  n.d. |  n.d. |  0.23 |  n.d. |  1.33 |  0.18 |  0.42 |  0.27 |
| Dy |  n.d. |  n.d. |  n.d. |  1.61 |  n.d. |  8.99 |  1.34 |  3.08 |  1.84 |
| Ho |  n.d. |  n.d. |  n.d. |  0.32 |  n.d. |  2.08 |  0.31 |  0.62 |  0.38 |
| Er |  n.d. |  n.d. |  n.d. |  0.89 |  n.d. |  5.64 |  1.06 |  2.02 |  1.03 |
| Tm |  n.d. |  n.d. |  n.d. |  0.09 |  n.d. |  0.85 |  0.12 |  0.25 |  0.22 |
| Yb |  n.d. |  n.d. |  n.d. |  0.99 |  n.d. |  5.32 |  1.06 |  2.07 |  1.27 |
| Lu |  n.d. |  n.d. |  n.d. |  0.17 |  n.d. |  0.80 |  0.10 |  0.26 |  0.20 |

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Major and trace elements determined by XRF; REE and Ta analyzed by LA-ICP-MS. n.a.= not analyzed;

n.d.= not determined. Abbreviations: d, dunite; grt-amph, garnet-amphibolite; amph, massive/banded

amphibolite.