

Table V-1a. Mineral distribution coefficients (d_i) of various cations in alkali-basalt suite of Massif Central, France (Villemant et al., 1981).

| Ion | Radius (Å) | olivine | clino- pyroxene | plagio- clase | magne- tite | ilmenite | horn- blende | feldspar | biotite |
|------------------|---------------|---------|--------------------|------------------|----------------|----------|-----------------|----------|----------|
| Na ⁺ | 1.02 | 0.005 | 0.17 | *1.2 | 0.04 | 0.04 | 0.54 | 0.99 | 0.2 |
| K ⁺ | 1.38 | | | 0.17 | 0.003 | | 0.29 | *1.9 | *1.9 |
| Rb ⁺ | 1.52 | 0.04 | 0.04 | 0.13 | <0.06 | (0.14) | *1.9 | 0.3 | *1.9 |
| Cs ⁺ | 1.67 | | 0.04 | 0.13 | 0.08 | | 0.5 | 0.14 | *1.6 |
| Mg ⁺² | 0.72 | *9.5 | *5.4 | 0.04 | *1.5 | *7 | *11 | | *35 |
| Ca ⁺² | 1.00 | 0.04 | *3.4 | *2.0 | | | *3.4 | 0.28 | 0.05 |
| Sr ⁺² | 1.18 | 0.02 | 0.16 | *2.7 | 0.1 | *(4.6) | 0.3 | *10 | 0.7 |
| Ba ⁺² | 1.35 | 0.03 | 0.04 | 0.56 | 0.14 | (0.4) | *6.4 | *3.6 | *10 |
| Ni ⁺² | 0.69 | *34 | *2.5 | 0.04 | *1.9 | *(30) | 0.8 | 0.5 | *1.3 |
| Co ⁺² | 0.75 | *5.1 | 1.0 | 0.07 | *4.8 | *(38) | *16 | 0.5 | *23 |
| Fe ⁺² | 0.78 | *1.9 | 0.99 | 0.04 | *1.4 | *20 | *3.6 | 0.08 | *7.3 |
| Mn ⁺² | 0.83 | *3.0 | *1.2 | | *7.4 | *63 | *1.6 | | *5 |
| Al ⁺³ | 0.54 | 0.002 | 0.48 | *1.6 | | 0.01 | 0.75 | *1.3 | 0.92 |
| Cr ⁺³ | 0.73 | *2.8 | *5.3 | 0.08 | *3.3 | *(82) | *2.9 | 0.6 | *5.4 |
| Sc ⁺³ | 0.75 | 0.22 | *3.0 | 0.04 | *1.4 | *(15) | *6 | 0.1 | *8.3 |
| Tb ⁺³ | 0.92 | 0.03 | 0.73 | 0.11 | 0.1 | *(8.2) | 0.9 | 0.1 | *1.1 |
| Eu ⁺³ | 0.95 | 0.03 | 0.63 | 0.5 | 0.06 | *(7.5) | 0.76 | *1.2 | *1.1 |
| La ⁺³ | 1.03 | 0.03 | 0.12 | 0.2 | 0.13 | *(4) | 0.6 | 0.24 | 0.7 |
| Si ⁺⁴ | 0.40 | 0.78 | 0.91 | 1.0 | 0.002 | | 0.66 | 0.96 | 0.52 |
| Ti ⁺⁴ | 0.61 | 0.05 | *1.1 | 0.05 | *12 | *100 | *5.0 | 0.05 | *13 |
| Hf ⁺⁴ | 0.71 | 0.04 | 0.48 | 0.05 | 0.2 | *(12) | 0.92 | 0.13 | *1.8 |
| Zr ⁺⁴ | 0.72 | 0.06 | 0.27 | 0.13 | 0.4 | *(18) | *1.2 | 0.27 | *2.5 |
| U ⁺⁴ | 0.89 | 0.04 | 0.05 | 0.06 | 0.08 | (0.6) | 0.15 | 0.1 | 0.13 |
| Th ⁺⁴ | 0.94 | 0.03 | 0.04 | 0.05 | 0.14 | *(1.2) | 0.11 | 0.09 | 0.12 |
| Sb ⁺⁵ | 0.60 | | 0.1 | 0.18 | 0.1 | (1) | 0.15 | 0.12 | 0.04-0.8 |
| Ta ⁺⁵ | 0.64 | 0.03 | 0.06 | 0.04 | 0.3 | *(2.7) | 0.62 | 0.08 | 0.56 |

The asterisks are d_i values of greater than one (compatible); values in parentheses represent only one determination.