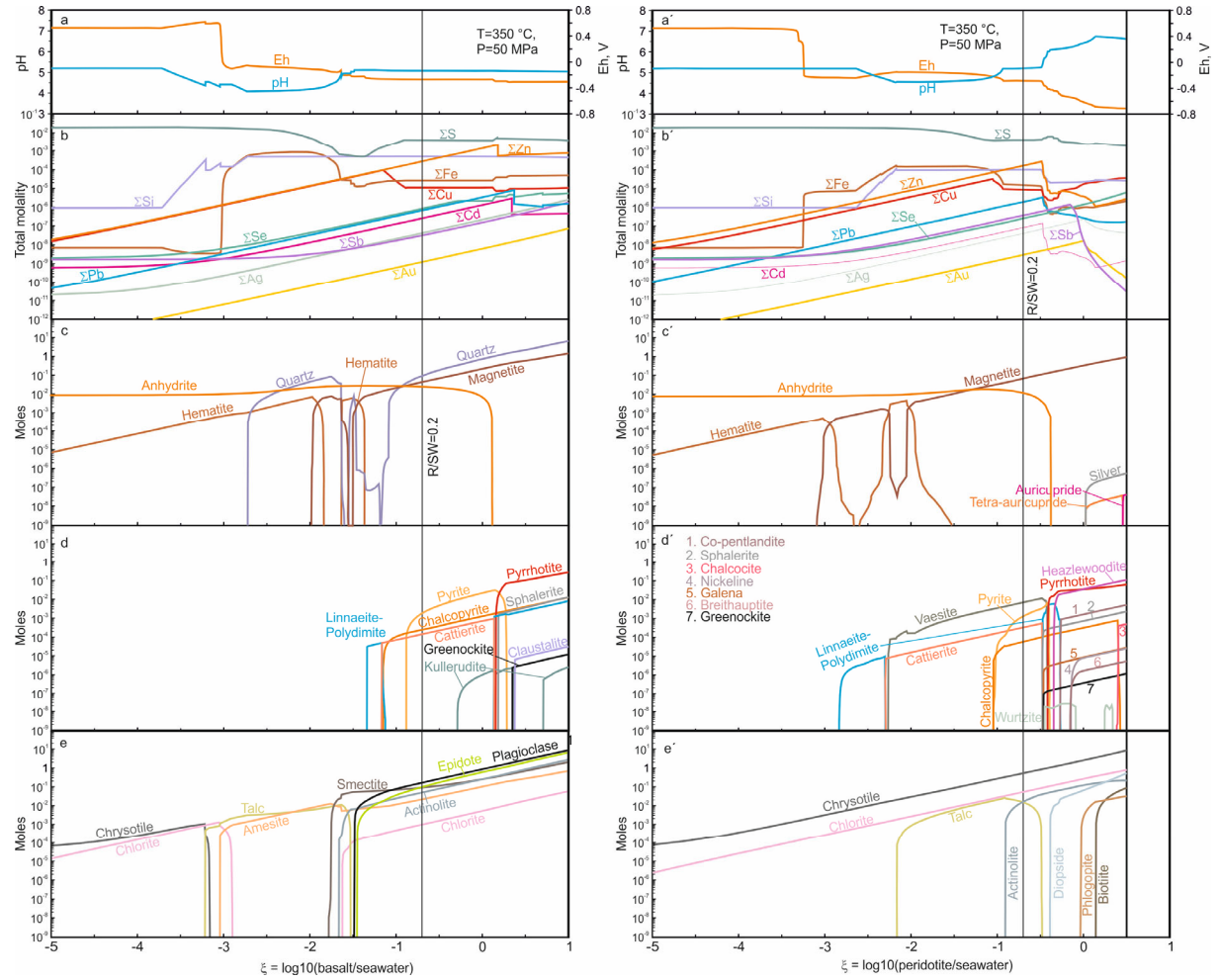


### Supplementary Material S3



**Figure S3.** Plots of Eh, pH (a, a'), molality of elements in solution (b, b') and contents of secondary minerals (c-e, c'-e'), which form during basalt/seawater (a-e) and serpentinized peridotite/seawater (a'-e') interaction at a temperature of 350 °C and a pressure of water column of ~50 MPa (~5500 m) depending on the basalt/seawater ratio. The vertical line of R/SW ratio of 0.2 (or 1/5) corresponds to the calculation of conductive cooling of reaction solution. Seawater reacted with rock at a depth of 2.2 km below seafloor in a temperature field of magmatic chamber. Plots for the serpentinized peridotite/seawater interaction at the  $\xi$  value of >0.5 are not presented, because the calculations do not correspond to natural mineral assemblages.