Effect of fO2 on high-pressure melting experiments

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New petrological experimental results were added to Tomiya (1995)
which determined the depth of Usu magma chamber. In the new experiments, fO2 was properly bufferred and the effect of fO2 on the experiments were examined. The three conditions of fO2 (NNO, MNO, unbuffered) were tested. According to the experimental results, the liquidii of Fe-bearing minerals were considerably effected by fO2, however, the estimated depth of Usu magma chamber was similar to the value estimated by Tomiya (1995) . The results were also compared to the calculated results by the thermodynamical model "MELTS" (Ghiorso et al., 1995). The model can partly reproduce the experimental results, however, it cannot properly reproduce the crystallization of hydrous minerals.