Stractural Variation in MgAl2O4-MgAlBO4 system under high pressure

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The structural variation in MgAl2-xBxO4 system under high pressure have been examined. The samples of x=0.10 and x=0.20 at 1873 K and 11 GPa and the sample of x=0.20 at 1273 K and 10 GPa have the single phase of spinel structure. The samples of x=0.20 and x=0.95 at 1273 K and 5 GPa coexist the spinel structure and the olivine structure. The lattice constants of x=0.16 and x=0.11 in spinel structure are a=8.0798 and 8.0837, respectively. The new high pressure phase of sinhalite (x=1.0) is discovered at 1273 K and 10-12 GPa. The new phase have monoclinic system (a=9.7962, b=4.339, c=7.4545, beta=110.256).