

THE FORMATION CONDITIONS OF IRONOXIDE DEPOSITS IN HASANCELEBI (MALATYA); A MICROTHERMOMETRIC APPROACH

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ABSTRACT This study intends to carry out microthermometric analyses on scapolite, phlogopite, fluorit, barite and calcite in metasomatic zones within the Hasacelebi ironoxide deposits, and to understand the T-P conditions of alterations/metasomatism by determining homogenization temperatures and salinity (% NaCl-equivalent) of the associated minerals. The relative density of the fluids forming the hydrothermal system was calculated by using salinity and homogenization temperature values of the minerals, and the microthermometric parameters were compared with the known hydrothermal systems. The homogenization and salinity (% NaCl-equivalent) of the minerals are as follows; scapolite (310-390°C, 10-21), phlogopite (>700°C, 25), barite (190-380°C and 80-170°C, 4,7-13), fluorite (150-380°C, 4,7-13), and calcite (80-320°C), respectively. It is present a relationships that are the density of the fluid inclusions with the mid-high salinity degrees and the low homogeneization temperatures. A significant relationships is present between paragenesis (order of formation) of the minerals above and the density of the fluids presumed to form these minerals; the inclusions with the lowest density is correlated with the highest homogenization temperature while the inclusions with higher densities are correlated with higher homogenization temperatures.

Key words: Hasancelebi, Malatya, fluid inclusions, ironoxide, scapolite, phlogopite fluorite, barite, ironoxide-Cu-Au deposits.

