



The Geological ve Geochemical Evaluation of Albite Deposits in Menderes Massif (SW Turkey)

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Menderes Massif which is one of the main rock association in southwestern Turkey consists of a Pan-African basement considered as the core and the overlying Lower Paleozoic - Paleocene age cover series. Albite deposits take place not only in the center but also around the Menderes Massif, with the increase amount of quartz from center to rim. The main rock units of the massif consist highly metamorphosed gneiss and mica schist hosting the albite deposits which situated in the tectonic lines has direction of N-NE. Nearly 250 feldspar quarries are being operated in the region. Albites are generally contaminated by minerals containing iron and titanium (rutile, sphene, mica etc.). The origin of the undesired elements in the albite deposits are aimed to obtain whether they originated from primary formation conditions or late alternations (metamorphism and/or deformation).

Preliminary studies were done on 75 samples of Armutludüzü albite deposit (Milas – Turkey) and geochemical composition of these samples are evaluated in point of undesired elements for albite's quality. Compared to pure albite which has %11,8 Na₂O in composition, the Armutludüzü albite deposit has a mean value of % 10,18 Na₂O and % 0,28 K₂O with undesired % 0,06 Fe₂O₃ and % 0,18 TiO₂ composition. By correlation of the geochemical data with geologic unit boundaries, it is obtained that Ti concentration becomes intense in the N40-45oE gneiss boundary and Fe concentration increases in the mica schist boundary. Titanium is the most important component of albite quality because of its negative effects on burning color and iron which is the other important component of albite quality is restrictive for albite usage in the glass industry.

Samples which are taken from core rocks and albites are being prepared for U- Pb and K-Ar/Ar-Ar dating methods to compare K-Ar/Ar-Ar ages measured from the micas which gives the latest deformation age and U-Pb ages of gneiss and albites which gives the actual age of formation. As a result of these studies, it is aimed to find whether the formation of the albites is related with the latest deformation processes or not.

Key words: albite quality, menderes massif, armutludüzü