



VOLCANISM ASSOCIATED BENTONITE FORMATION (KURŞUNLU AREA) IN THE SOUTHERN MARGIN OF GALATEAN VOLCANIC PROVINCE , NW of CENTRAL ANATOLIA TURKEY

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The studied area is located in the southern margin of Galatean Volcanic Province which was developed on the Upper Cretaceous accretionary complex and bounded on the north by an intercontinental shear zone – North Anatolian Fault Zone. The volcanic province shows post-collisional tectonic setting from a previously subduction-modified mantle sources , in which main volcanic activity took place through the Miocene period (between 25-10 Ma) and the latest cycle was completed between 11–8.5 Ma represented by local alkali basaltic flows resting. on the older volcanic units that directly related rift volcanism induced by regional extensional tectonic.

The volcanics associated with bentonite beds (Kurşunlu -Çankırı) dated as late Miocene, consist of basaltic and andesitic lavas and their pyroclastic rocks such as agglomera , volcanic breccia and tuffs which are capped by volcanic sandstones with conglomeratic interlayers. Bentonites make the outcrops in the shape of lens and heads exposed in the Kurşunlu and Şabanozu volcanics. XRD analyses have revealed that smectite is dominant clay mineral of the bentonite beds in the volcanic realms. The smectite generally is rich in Na. So it has been determined as Na-Ca smectite responding to end member. SEM study indicates that smectite was originated from alteration of feldspars, supported by revers relationship between feldspars and smectites which are gradually increased with the loose of feldspars. On the other hand some smectites were precipitated as void- or fracture fills. All findings suggest that smectites studied were formed very closed the volcanic rocks, in which feldspar alterations or dissolution under humid conditions of shallow lake or local swamps created the suitable conditions leading to formation of the bentonite beds.