

Geochemical Investigation of Weathering and Sorting for Tepeköy Sandstones

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Abstract : The Chemical Index of Alteration (CIA) values of Late Eocene-Oligocene aged sandstones that exposed on the eastern edge of Tuz Lake (Central Anatolia, Turkey) range from 49 to 59 with an average of 51. The A-CN-K diagram indicates that sandstones underwent post-depositional K-metasomatism. The original average CIA value before the K-metasomatism is calculated as 55. This value is lower than that of Post Archean Australian Shale (PAAS) and defines a low intense chemical weathering in the source-area. Extrapolation of sandstones back to the plagioclase-alkali feldspar line in the A-CN-K diagram suggests a high average plagioclase to alkali feldspar ratio in the provenance and a composition close to granodiorite. The Zr/Sc and Th/Sc ratios with the Al_2O_3 -Zr-TiO₂ space do not show zircon addition that refuse both recycling of sediments and sorting effect. All these data suggest direct and rapid transportation from the source due to topographic uplift and probably arid to semi-arid climate conditions for the sandstones.

Keywords : central Anatolia, sandstone, sorting, weathering

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