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Nature of Listwaenite: Eskisehir (Yunusemre) Turkey

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Listwaenite zone are generally located along minor faults, particularly in contact of serpentinite or ultramafic rocks. Silicification, carbonitization as quartz or carbonitization veins display en echelon structures of these zones. Listwaenite mostly take place during the late stages of the tectonic emplacement of serpentinized ultramafic rock units, along deep-seated suture zone. In research area there is no magmatic intrusion in connection with the Listwaenite of the region. The alteration degrees of the of serpentinized ultramafic rock units led to classify the Listwaenite into 3 zones with different colour, mineral compositions and topographic elevations. The first zone is characterized by reddish brown in colour and mostly composed of iron oxide and carbonate minerals with less silicic minerals. The silicic minerals show fibrous and ribbons textures. The second zone is pale red to pale brown in colour and is mainly composed of carbonate and silicic minerals with fewer amounts of iron oxide minerals. Spheroidal, radial and kidney textures of silicic minerals are found within the second zone of the Listwaenite. The third zone is pale brownish gray and gray in color and is mainly composed of silicic minerals with fewer amounts of carbonate minerals. The silicic minerals mostly characterized by the presence of camp, and granular texture within this zone. The listwaenitization grade laterally into the surrounding serpentinized ultramafic through a talc-carbonate zone where the accessory magnetite of the serpentinite was destroyed. The transitional contact between each zone and occurrence of relict minerals, such as serpentinite and Cr spinel show a derivation of the Listwaenite from the serpentinized ultramafic of Eskisehir. Mineralogical, textural and geochemical features reveal that the Eskisehir (Yunusemre) Listwaenite correspond to a complex hydrothermal evolution and interactions with crustal material or seawater.