# ORIGIN OF MAGNESITE OCCURENCES IN SÜLEYMANİYE, MİHALLIÇIK, ESKİŞEHİR, TÜRKİYE

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In this study, the approaches on the origin of magnesite occurences which are developed related to altered ultramafic rocks in the peridotites of Tavşanlı Zone have been implemented with isotopic data in addition to geological and mineralogical data. Cryptocrystalline textured magnesites display two different type of formation as both individual veins at the fractures and cracks of ultramafic rocks and stockworks. In order to determine carbon source in magnesite composition and formation of magnesite, $\delta C^{13}$ and $\delta O^{18}$ isotope studies have been done. $\delta C^{13}$ (PDB) values in magnesite vary between -2.71 and -7.69 ‰. On the other hand, $\delta O^{18}$ (SMOW) values vary between 27.35 and 29.43 ‰. These isotopic data indicate that magnesites are formed as mixing of both $CO_2$ from atmospheric origin of carbon for magnesite occurrences is the result of mixing $CO_2$ from atmospheric origin and $CO_2$ released during decarbonization of organic rich sediments. Volcanogenic $CO_2$ are also effective in the formation.The mineralization of Süleymaniye magnesites probably occured after serpentinization of ultramafic rocks under near surface and low temperature conditions.

Key Words: Magnesite, isotope, Süleymaniye, Turkey