Characteristics of the ore-bearing quartz veins using fluid inclusions, Andarian, NW Iran

E. Namnabat1, M. Ghorbani1, S.H. Tabatabae2

1- Faculty of Earth Sciences, Shahid Beheshti University, Tehran, Iran
2- Faculty of Mining Engineering, Isfahan University of Technology, Isfahan, Iran

(Received: 17/11/2018, in revised form: 7/2/2019)

Abstract: Andarian area is located north of Tabriz city, north west Iran, and tectonically is a part of Ahar-Arasbaran magmatic belt. Geology of the area includes Miocene shallow pluton, Cretaceous flysch-type sediments, metamorphic rocks (hornfels and skarn) and volcanic rocks. Mineralization occurred in two stages: primary and secondary. The primary ore minerals include Au, pyrite and stibnite. Malachite, azurite and iron-hydroxides are the main minerals of the secondary phase. Two phases of liquid-rich and gas-rich inclusions are the most common type of inclusions. The average formation temperature of quartz-gold vein deposit is 237°C with low salinity (with an average of 8.7 wt% NaCl equivalent). The pressure of entrapment for fluid inclusions is between 26 to 51 bars, which is equal to the depth of 270-550 m. Based on fluid inclusions studies, the gold bearing quartz veins formed in epithermal condition.

Keywords: Quartz; fluid inclusion; gold mineralization; Andarian.

*Corresponding Author: Tel: 09131669084, Fax: 02122925271, Email: elahe.n65@gmail.com