

Investigation of mineralization of Egrikar Fe-Skarn Deposit (Torul-Gümüşhane, Turkey)

F. SİPAHI^{1*}, A. KAYGUSUZ¹, İ. AKPINAR¹,
Ç. SAYDAM EKER¹, A. VURAL¹ AND M. YILMAZ²

¹Gümüşhane University, Geological Engineering, Department, Gümüşhane, Turkey (*ferkansipahi@gmail.com)

²Gümüşhane University, Institute of Natural Science, Geological Engineering Department, Gümüşhane, Turkey

The north eastern Black sea region of Turkey, known as Eastern Pontides, belonging to the Alpin metallogenic province have numerous skarn, porphyry, epithermal and massive sulfide type deposits. The aim of this study is to investigate the mineralization characteristics of the Egrikar skarn deposit located in the NE Black Sea region of Turkey. The Fe skarn deposit at Egrikar is represented by exoskarn zone and hosted by Late Cretaceous carbonate rocks comprised of limestone, adjacent to the Eocene (?) granitoid. The prograde textures include lattice, cluster, spots, and mossiness, and the retrograde textures are brecciated. The mineral paragenesis of Egrikar skarn deposit is consist of diopside, granat, epidote, actinolite, tremolite, quartz, magnetite, and hematite, with less amount of chalcopyrite, pyrite, gold and native copper.

In the mineral assemblages, both pyrite and magnetite were formed in the first and the second phase; and chalcopyrite occurs after these. Hematite mainly appears as results of magnetite and pyrite alteration following second phase, and with less oftenly alteration of mafic minerals. Magnetite is generally massive and sporadically banded with some martitization. Pyroxene occurs as gang mineral close to the granitoid between endoskarn and exoskarn zone. There are less amount of garnet, epidote, quartz and amphibole along with pyroxene occurrences from endoskarn to exoskarn zone.

The observed anhydrous minerals such as garnet (andradite) and clinopyroxene (diopside) are indicative of prograde stage, and the presence of hydrous minerals such as epidote and amphibole show that retrograde stage was developed later. Microthermometric data on quartz from exoskarn zone shows that the skarnization took place at 120°-380°C temperatures. The magnetite mineralization are characterized by homogenization temperatures of 290 to 380°C and with salinity range of 3.4 to 7.6 wt% NaCl equivalent.

The type of garnet and clinopyroxene, the abundance of magnetite with minor pyrite suggest that the Fe skarn deposit at Egrikar formed under oxidized conditions.