
Petrographic Evaluation of Jhiroli Magnesite Deposit, Kumaun Lesser Himalaya, India

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Abstract

Jhiroli magnesite mine in the vicinity of Kumaun Lesser Himalayas is one of the important resources of magnesite after Selem in Tamilnadu. The magnesite exhibits various types due to varied colour, morphological characteristic and composition indicating different processes of their formation. The magnesite is differentiated into eight different varieties on the basis of grade and compositional variations indicating their different genesis.

Petrographic studies reveal that magnesite occurs in bedded form exhibiting sharp contact with dolomite. Fine grained dolomite hosting magnesite forms dense mosaic of interlocking, planar, sub-hedral to anhedral crystals. It is coarse grained and crystalline in nature showing rhombohedral cleavages, radiating and spherulitic patterns with pink and brownish coating. The contacts of magnesite are sharp and irregular. Magnesite usually found as aggregate of coarse crystals showing brownish appearance under microscope. Replacement reactions are clearly distinguished where the relicts of dolomite found in magnesite matrix. The other minerals present in the mine are talc and chert. Talc is found at the contact zones and as pockets in dolomite. The origin of the magnesite deposit is replacement type related to low grade metamorphic origin.

Keywords: Petrography, Magnesite, Jhiroli, Kumaun Lesser Himalaya, India.