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Sample Number : 3056

Identification : Chloritized, weakly carbonated quartz
microdiorite, devoid of sulphides

Description :

The hand specimen is a slightly weathered sample of greenish black, fine to medium-grained, massive rock of microdioritic or doleritic appearance.

A staining test revealed minor K-feldspar as interstitial fine grains.

In thin section the sample is seen to display an hypidiomorphic, even-grained, intrusive igneous texture, modified mainly by chloritization of its primary mafic minerals. The grainsize is about 1mm.

The dominant mineral is plagioclase in well twinned, subhedral tabular grains lightly flecked with calcite and with minor chlorite along cleavages. The composition is sodic andesine. Quartz is prominent as anhedral grains and there are a few anhedral grains of orthoclase. Chlorite is quite abundant as interstitial aggregates with subordinate calcite, but it does not retain textures which reveal the nature of its precursor mineral. There are many equidimensional, subhedral grains of opaque oxide, heavily altered to leucoxene (presumably the grains were originally ilmenomagnetite).

An approximate mode is :

5-8%	quartz
3-5%	orthoclase
65-75%	plagioclase
12-18%	chlorite
1-3%	calcite
4-6%	opaque oxides and leucoxene

Comments and Interpretation :

The sample is confidently interpreted to be a chloritized, weakly carbonated quartz microdiorite which must have crystallized initially within a sill, dyke or small intrusion. The sample does not resemble any other rocks examined for this report.

There is no sign of sulphide mineralization and it is difficult to know whether the chlorite-carbonate alteration is related to a mineralizing hydrothermal event or whether it represents simply a greenschist facies adjustment of the primary mineralogy. There is no sericitization of the feldspar.