

Sample Number : T 238

Identification : Heavily sericitic, foliated, weakly porphyritic, quartzose intermediate felsite or leucocratic andesite intrusion or lava

Description :

The sample is a hand specimen of moderately foliated, greenish grey rock. On sawn surfaces there is a moderately massive greenish to brownish grey appearance, similar to that seen in some of the lavas or subvolcanic intrusions previously examined. The "massive" rock is streaked with greenish grey minerals.

A staining test revealed no K-feldspar.

In thin section the sample is seen to be extensively sericitized, but there seems to be a primary allotriomorphic granular texture formed by heavily altered, untwinned or poorly twinned plagioclase and subordinate quartz, with grainsizes of about 0.1 to 0.3mm. Subhedral, blocky mafic silicates, perhaps pyroxene, have been pseudomorphed by chlorite with a lattice of hematite plates; such pseudomorphs are commonly less than 0.3mm in size, but a few attain 0.5mm. Other less chloritic, more opaque pseudomorphs resemble weakly hematized and chloritized magnetite and retain strong magnetism. There is no sharp distinction between the pseudomorphs of possible pyroxene and the pseudomorphs of possible magnetite.

Much of the sericite has a crude foliation around grain boundaries and a fine clouding effect within plagioclase in a fashion suggestive of production by regional metamorphism. Some coarser aggregates with associated calcite look more like the style seen in hydrothermal alteration and there are vague suggestions that the aggregates may represent completely altered feldspar phenocrysts, about 1mm in size and smeared by shearing.

An approximate mode is :

55-60%	remnant plagioclase
30-35%	sericite
4-5%	quartz
1-2%	chlorite
2-3%	magnetite and hematite
1-2%	calcite

Comments and Interpretations :

It seems quite likely that this rock originated as a sparsely porphyritic, quartz-bearing, intermediate felsite or leucocratic andesite crystallized as a subvolcanic intrusion or possibly a lava. It probably had a few feldspar phenocrysts which were hydrothermally altered to sericite and calcite. It carried disseminated grains and possibly small phenocrysts of probable magnetite and possible pyroxene, now chloritized and partly hematized; the timing of such alteration is unclear. Probably dynamothermal metamorphism accounts for a blurring of primary textures and mineralogy, especially by development of abundant sericite.