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Sample Number : T 211

Identification : Mildly sheared hydrothermal breccia of intermediate porphyritic felsite clasts in a matrix of chlorite-calcite-pyrite

Description :

The sample is a small, lightly weathered, light olive grey hand specimen with poorly displayed breccia or tuff textures and porous patches of former veins or cement.

A staining test revealed no K-feldspar.

In thin section the sample plainly displays a brecciated texture in which angular clasts, about 0.5 to 25mm in size, are set in a partly sheared, chloritic matrix.

The clasts display subhedral, tabular phenocrysts of plagioclase, about 0.1mm in size, scattered sparsely through a finely recrystallized (0.05mm) sutured mosaic of untwinned plagioclase and minor quartz. The phenocrysts are commonly altered to calcite and the groundmass is variably altered to sericite and minor calcite and chlorite. There are a few inconspicuous aggregates of chlorite and rutile after probable mafic silicate phenocrysts.

The breccia matrix consists of chlorite, carbonate (apparently calcite) and minor, subhedral pyrite (0.1 to 0.3mm). Random grain orientations characterize some parts, whilst other parts are sheared. Sericitic alteration of the clasts is most obvious near sheared matrix.

An approximate mode is :

80-85%	clasts of porphyritic, intermediate felsite
6-8%	matrix chlorite
10-12%	matrix calcite
0.3-0.4%	matrix pyrite

Comments and Interpretations :

The sample does appear to represent a hydrothermal breccia with mild shearing attributable to later dynamothermal metamorphism. The original rock was sparsely porphyritic, intermediate felsite (or leucocratic andesite), probably a lava, and it was probably disrupted by expansive hydrothermal processes without much hydrothermal alteration. The breccia was cemented by chlorite-calcite-pyrite and at a later stage it was mildly sheared by dynamothermal metamorphism which probably caused the production of sericite in parts of the felsite clasts.

Perhaps this rock represents felsite lava hydrothermally brecciated and mineralized by solutions from the intrusive andesite T 210, or some other subvolcanic intrusion.