

Sample Number : T 096

Identification : Sericitic slate with veinlets of magnetite
and chlorite

Description :

The sample is a lightly weathered hand specimen of greenish grey slaty rock with a dark, ferruginous veneer on one joint surface.

A staining test revealed no K-feldspar.

In thin section the sample displays a slaty texture with one strong schistosity and two weaker cleavage directions forming a rhombic pattern bisected by the main foliation.

The mineralogy is dominated by sericite flakes, chlorite, quartz (0.02mm) and tiny grains of (?)rutile. Subhedral opaque cubes or similar forms (0.01 to 0.05mm) occur as short streaks along some foliation planes; reflectivity and magnetic properties are consistent with magnetite. More abundant magnetite of similar shape and size occurs with chlorite in fissure veinlets (0.2mm wide) which have been deformed by the schistosity.

An approximate mode is :

65-75%	sericite
4-6%	chlorite
20-30%	quartz
0.2-0.4%	magnetite
0.1-0.3%	rutile

Comments and Interpretations :

The sample is considered to have originated as a mudstone. It was probably converted to a slate by contact metamorphism which introduced minor magnetite in fissure veinlets and along cleavage planes. Subsequent dynamothermal metamorphism has mildly deformed the veinlets.

Whilst it is possible that the sericite in the slate could have been generated by hydrothermal processes, it seems more likely that it reflects metamorphism and that hydrothermal activity was confined to chlorite-magnetite veinlets, probably associated with an intrusion.