

Sample Number : T 084

Identification : Intensely albitized, weakly chloritized, epidotized and sericitized, coarse, intermediate ashflow tuff

Description :

The sample is a small, lightly weathered hand specimen which displays rounded to irregular, moderate orange pink clasts, about 1 to at least 20mm in size, set in a light olive grey matrix.

A staining test revealed that the largest, most pink, lithic clast is richly potassic, but that the smaller more orange clasts are only speckled with K-feldspar.

In thin section the sample is seen to have textures consistent with a coarse ashflow. Large lithic clasts, pumice and crystal fragments are scattered through a devitrified matrix with poorly preserved, welded textures in which former vitric shards were about 0.2 to 1mm in size.

The large, pink, potassic lithic clast is seen to be trachyte with a few phenocrysts of albitized feldspar (now fine mosaics) set in a cloudy matrix of mainly K-feldspar laths. Other large clasts appear to have been filamentous pumice, variously replaced by sericite, anhedral, untwinned albite, an epidote mineral, minor K-feldspar and a little leucoxene. Some carry clusters of lightly sericitized plagioclase phenocrysts and a few leucoxenized opaques. There are a few free phenoclasts of lightly sericitized plagioclase. The formerly vitroclastic matrix consists of a sutured mosaic of anhedral, generally untwinned, fine albite (faintly pigmented by tiny brownish to reddish specks), accompanied by minor chlorite and an epidote group mineral.

An approximate mode is :

10-12%	trachytic lithic clasts
50-60%	pumice clasts (albitized, sericitized and epidotized)
0.5-1%	plagioclase phenoclasts
30-40%	vitroclastic matrix (now albite with minor chlorite and epidote)

Comments and Interpretations :

The sample is considered to represent a moderately welded, coarse, ashflow tuff (perhaps a tuff agglomerate if the clasts observed in the field are large enough). It contained many clasts of pumice, some trachytic lithic clasts and a large amount of glass shards. Deposition may well have been terrestrial, since the pumice would tend to float and welding would be inhibited if eruption occurred into water. The composition of the pumice and glass was intermediate, but perhaps not as potassic as the trachytic lithic clasts.

Alteration has involved extensive albitization (causing the orange-pink colour) and minor epidotization and chloritization. Mild sericitization was confined to pumice and feldspar phenocrysts. It did not affect the vitric matrix.