

G 214 Optical Mineralogy and Igneous Petrology	G 214 Optiese Mineralogie en Stollingspetrologie
Practical Three - 16 th March 2006	Praktika Drie – 16 Maart 2006
Total Marks = 100	Totale Punte = 100
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Investigation of Alteration on Basalt Lavas Alterasie van Basaltiese Lawas	
YOUR NAME:	STUDENT NO:

OBJECTIVES

The objectives of this practical are to:

1. Look at the impact of alteration processes on the mineralogy and texture of basalt lavas
2. Understand the processes responsible for these changes
3. Understand the environmental conditions under which these processes occur

INSTRUCTIONS

Provided are a variety of thin-sections from the cores and rims of pillow lavas of basalts from the Troodos Ophiolite on Cyprus. Examine at least 4 thin-sections to look at the variation in texture and mineralogy. Make sure that you choose four sections that show variations as some sections will be similar.

Alteration leads to the development of very fine-grained mineral assemblages that are difficult to identify using a normal optical microscope. Most of the minerals will fall into one of three categories

- Relict igneous minerals
- Zeolites
- Smectites and other clays

You are not expected to identify zeolites and smectites but make sure you comment on the textural relationships

At the end of the practical today, you must hand in a report giving sketches of the thin-sections you have looked at (remember to give the thin-section number), a written description of what you saw, and some comments on what processes might have affected the rocks.

DOELSTELLINGS

Die doelstellings van die prakties is om:

1. Ondersoek in te stel na die impak van alterasie prosesse op die mineralogie en tekstuur van basaltiese lawas
2. Die prosesse te verstaan wat verantwoordelik is vir bogenoemde veranderinge
3. Die omgewingstoestande waaronder die prosesse plaasvind, te verstaan

INSTRUKSIES

'n Verskeidenheid dunsnitte van die kerne en rande van kussinglawas van basalt vanaf die Troodos Ophioliet op Sypus, word aan u beskikbaar gestel. Bestudeer ten minste 4 dunsnitte om te kyk na die variasie in tekstuur en mineralogie. Maak seker dat u vier snitte kies wat variasies toon, aangesien sommige snitte ooreenstem.

Alterasie lei tot die vorming van baie fynkorrelrige mineraalversamelings wat moeilik is om onder 'n gewone optiese mikroskoop te identifiseer. Die meeste van die minerale sal onder een van die volgende kategorieë sorteer:

- Relik stollingsminerale
- Zeoliete
- Smektiete en ander kleie

Daar word nie van u verwag om zeoliete en smektiete te identifiseer nie, maar maak seker dat u wel verslag lewer aangaande teksturele verhoudings.

Teen die einde van vandag se prakties behoort u 'n verslag in te handig wat sketse van die dunsnitte wat u bestudeer het, bevat (onthou om die dunsnitte korrek te nommer), 'n geskrewe beskrywing van wat u gesien het, en kommentaar aangaande die prosesse wat die gesteentes beïnvloed het.