



POWDER X-RAY DIFFRACTION ANALYSIS OF SUBMITTED SAMPLES

QUT Reference: XAF6521
Your Reference: CE68963C
Date: 21 October 2010

INTRODUCTION

The sample was submitted by Ms Shey Goddard of SGS Australia Pty Ltd (Portsmith) for powder x-ray diffraction analysis to determine the identity and nominal concentration of the compounds present in the sample. The sample was received on the 19 October 2010.

PROCEDURE

A specimen was prepared using a McCrone micronising mill to reduce the particle size. Ethanol was used in the mill as a fluid and the prepared sample was dried overnight at 55C. Step-scanned diffraction pattern was collected using a Panalytical X'Pert PRO vertical diffractometer, copper $K\alpha$ radiation and the usual conditions. The powder x-ray diffraction data was analysed using Jade (V9.0, Materials Data Inc.) for phase identification and SiroQuant (V3, Sietronics Pty Ltd) for semi-quantitative analysis via a Rietveld method. The results are normalised and represent a ratio of concentrations.

RESULTS

The minerals identified are given on the graphics. Some minor phases may not be identified. The phases identified are the closest matched in the reference database.

Table of mineral abundances (relative, nominal) wt%

XAF Number	6521
Client Information	CE68963C
Plagioclase (Albite)	17
Foresterite	24.5
Diopside ($MgCaSi_2O_6$)	52
Magnesioferrite	4.5
Hematite	2

Tony Raftery
Senior Technologist

Powder XRD patterns

