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CLIENT: UIS

DATE: 25 June 2022

SAMPLES: 1 Sample (44906)

ANALYSIS: Qualitative and quantitative XRD

The material was scanned after addition of 20 % Si for quantitative determination of amorphous content and micronizing in a McCrone micronizing mill. The material was prepared for XRD analysis using a back loading preparation method.
Diffractograms were obtained using a Malvern Panalytical Aeris diffractometer with PIXcel detector and fixed slits with Fe filtered Co-Kα radiation. The phases were identified using X'Pert Highscore plus software.

The relative phase amounts (weight %) were estimated using the Rietveld method.

Comments:

- In case the results do not correspond to results of other analytical techniques, please let me know for further fine tuning of XRD results.
- Mineral names may not reflect the actual compositions of minerals identified, but rather the mineral group.
- Smectite, lizardite (serpentine), vermiculite, chlorite and kaolinite peaks overlap and further test would be necessary to distinguish. Identification is largely based on peak shapes and positions.
- Due to preferred orientation and crystallite size effects results may not be as accurate as shown in the table.
- Traces of additional phases may be present. Quantities below 0.5 % may be unreliable.
- Determination of amorphous content can carry an error of +- 15 weight per cent.

If you have any further queries, kindly contact me.

Dr. Sabine Verryn (Pr.Sci.Nat)

Samples will be stored for 3 months after which they will be discarded.

	Mullite	Quartz	Hematite	Calcite	Kaolinite	Gobbinsite	Amorphous
UIS_44906_833814_Southern_Proteins_Boiler Ash	13.8	3.9	0.7	0.2	0.8	0.5	80.2

0 = n.d. – not detected above the detection limit of 0.5-3 weight per cent