

## **Fine Clay Mixing Fabric Group**

(MC 2013/15, 36, 40, 42, 46, 47, 51, 52, 76, 83, 84, 86, 87, 94, 95, 96, 104, 105, 106, 161) (Fig. 3)

### **Inclusions**

20-25%. eq. sa –sr. < 1 mm. Single- to double-spaced. Moderately to well-sorted. Unimodal grain size distribution.

### **Coarse Fraction**

22-27%. 2 mm

*Predominant:* Sanidine; eq. a-sa. < 1 mm. Sometimes with undulose extinction. Can be simply twinned.

*Common:* Clinopyroxene; sa-sr. < 1.5 mm. Second order birefringence. High relief. Augite

*Common-Few:* Weathered igneous rock inclusion; el & eq. sr-r. < 3 mm. Micro-phenocrysts of plagioclase feldspar in a brown groundmass (samples MC 2013/15, 76). Could be basalt?

*Common-Few:* Opaque inclusion; eq & el. Black in XP and PPL. Magnetite (samples MC 2013/15)

*Common-Few:* Micrite; r. < 1 mm. Primary calcite identified as inclusions and in voids (samples MC 2013/15, 47, 52, 84)

*Common-Few:* Mono-crystalline quartz; eq & el a-sa. < 1.5 mm. Some have undulose extinction.

*Common-Few:* Pyroclastic rock; el r. < 2 mm. Light-coloured and with vesicles. Clasts derived from magma. Pumice (sample MC 2013/76).

*Few-absent:* TFs; concentrations of two types of clay-rich streaks. One is brown in PPL and red in XP, whereas the other is light-coloured in both XP and PPL (samples MC 2013/15, 52).

*Few-absent:* Zeolite; eq & el r. < 2 mm. Euhedral microphenocrysts of leucite in an opaque groundmass (samples MC 2013/15, 47)

*Rare:* Plagioclase feldspar; a- sa. < 2 mm. Altered (samples MC 2013/15, 76)

*Rare:* Biotite; eq. a. < 1 mm (samples MC 2013/52, 76, 83)

*Rare-very rare:* Chert; eq. sa-sr. < 1.5 mm (sample MC 2013/15, 47)

### **Fine Fraction**

73-78%. < 1 mm

*Common:* Feldspar

*Common:* Opaques

*Common-Few:* Quartz

*Common-Few:* Augite

*Common-Few:* Biotite

## Matrix

65-70%. Most samples are orange-brown in PPL and red-brown in XP (samples MC 2013/15, 42, 46, 52, 76, 96), although some are brown in PPL, and black-brown in XP (samples MC 2013/47, 83, 84, 86, 87). Optically inactive (samples MC 2013/15, 46, 47, 52, 83, 84, 96), to moderately active (samples MC 2013/42, 76). Different firing horizons (samples MC 2013/15, 46, 47, 96), sometimes with indication of bloating pores (samples MC 2013/15, 46, 47). Heterogeneous caused by TFs.

## Voids

10%. Mainly micro-vughs (samples MC 2013/15), and occasionally meso-vughs and channels (samples MC 2013/42, 46, 76, 87). Strong alignment to the margins. Micrite has been deposited in voids. Bloating holes, as the result of over-firing were also identified (samples MC 2013/15, 46, 47).

## Comments

This fabric group is defined by a red clay with well-sorted fine sanidine and augite inclusions. Occasionally, sand-sized zeolite and weathered igneous rock inclusions (could be basalt) can be identified. Heterogeneity in the clay matrix is caused by magnetite and micrite inclusions. It would appear that this fabric group is characterised by clay mixing, consisting of a light-coloured clay with calcite and quartz inclusions and a red clay with fine biotite and sanidine inclusions. Most samples are fired in an oxidising atmosphere and at a moderate to high temperature (samples MC 2013/15, 46, 47, 52, 96). Some samples have bloating pores in the clay matrix, which is suggestive for over-firing (samples MC 2013/15, 46, 47), whereas others have distinctive firing horizons (sample MC 2013/15, 46). This fabric was used for the manufacture of amphorae at the production sites of Ad Medias and Forum Appii. It has been identified on a number of consumption sites in the region (samples MC 2014/42, 52, 86, 87, 96). The mineralogical composition of this fabric suggests that it may comprise a fine version of the Clay Mixing Fabric Group – the well-sorted and fine nature of the inclusions indicates, however, that it comprises a levigated variant.

It should also be noted that the fabric of a frying pan, of which several fragments were found on consumption sites near Forum Appii and Ad Medias (samples MC 2013/36, 51, 94, 95, 96, 104, 105, 106, 161), appears to be similar to the Fine Clay Mixing Fabric Group. The variation in the colour and texture of the clay matrix suggests a compositional similarity, even if confidently matching these fine fabrics in thin section is difficult.

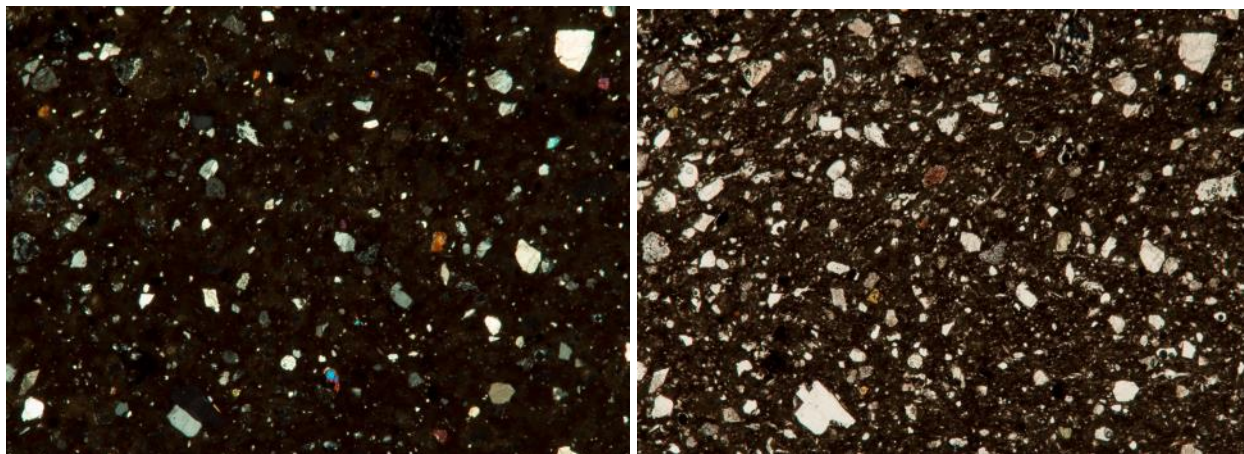


Fig. 3: Fine Clay Mixing Fabric in XP (left) and PPL (right). Width of individual images = 5.8 mm.