

	<u>%</u>
Chalcedony	Trace
Kaolinite/dickite	3
Tourmaline	Trace-1
Voids	10

The mean grain size of this sediment is about 0.1 mm and sorting has been most effective; however, few grains retain their detrital characteristics and most are angular and have low sphericity. This is the result of deformation of the rock during burial and tangential grain boundaries have been replaced by long and concavo-convex forms. A considerable proportion of the silica is probably recrystallised. Much of the strain has been absorbed by the less competent (than the quartz) lithic material which is fine-grained and contains variable amounts of clay, as well as quartz. In fact, much of what now appears to be matrix probably formed part of the detrital fraction and has now been squeezed into cusped and irregular shapes between rigid quartz grains. The presence of highly deformed muscovite flakes attests to the extent of the stressing forces. Plagioclase, microcline and mica in the detrital fraction, as well as lithic fragments, indicate that the rock is only sub-mature, at best.

As described above, physical rearrangement has been extensive, but chemical diagenesis has resulted only in the growth of small 'pools' of decussate kaolinite/dickite. Since this material has absorbed some of the purple-dyed araldite used to impregnate the sample it cannot be discounted as a source of some of the rock's porosity.

Considering the compaction of the rock, voids are remarkably common; most are of the order of 0.05-0.1 mm across. It is possible that the voids are interconnected, at least over short distances.

This is a well-compacted very fine-grained sandstone which retains a considerable porosity.