



Fig. 1. Experiments for dissolution of diatomite at pH 3 (black) and pH 9 (red). The grey line denotes the composition of the solid. High initial Al/Si ratios (Fig. 1a) indicate the initial dissolution of an aluminium-rich surface layer, that is accompanied with the release of isotopically light Silicon into solution (Fig. 1b). The opposite observation at pH 9 can be interpreted by oversaturation of the solution with respect to secondary Al-containing minerals and the adsorption of Silicon on those secondary phases.