Dissolution of goethite by acetohydroxamic acid

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We conducted dissolution experiments of goethite by acetohydroxamic acid (aHA) and adsorption experiments of aHA on goethite under neutral pH conditions (5<pH<9). Dissolution rates of goethite were from 1.0 to 1.2 (micro mol/hr/m2), and concentrations of adsorbed aHA on goethite were from 2.9 to 3.4 (micro mol/m2) in the experimental pH condition. Zeta potential of goethite was lowered from 8 to 16 mV by chemisorption of aHA. These results can be explained by the exchange of adsorbed water molecules by aHA and the following dissolution of goethite promoted by the adsorbed aHA.