Iron hydroxide sulfate Fe(OH)SO₄ is a possible precursor material for the synthesis of iron oxide particles. Iron oxide particles can, for example, be used as a pigment for classic paint colors such as sienna and umber. Iron oxide particles are nowadays also used as a magnetic storage medium. So called ferrofluids contain superparamagnetic iron oxide nanoparticles which can serve as a contrast medium in MRT. The viscosity of ferrofluids depends on the magnetic field which leads to an application in adaptive dampers.

**Results**

The STA-MS measurement exhibits a two-step release of H₂O with mass number 18 below 600°C and the release of SO₂ and O₂ with mass numbers 64 and 32 between 600°C and 800°C. The final product is Fe₂O₃ (hematite). The corresponding massloss steps of 2.5%, 4.3% and 45.5% are accompanied by endothermic effects with entire enthalpies of 246 J/g and 1170 J/g.