Photochemical reduction of iron trichloride in ethyl acetate: synthesis, Mössbauer spectra and the crystal structure at 80 K of hexakis(ethyl -acetate)iron(II) bis-tetrachloroironate(III).

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Streszczenie

$FeCl_3$ in ethyl acetate under the influence of sunlight, undergoes partial reduction yields the $[Fe(CH_3CO_2Et)_6](FeCl_4)_2$ salt. The Mössbauer spectra showed that the iron atoms are at +2 and +3 oxidation states. The crystal structure determined by X-ray diffraction methods at 80 K and refined by full-matrix least-squares techniques to$R$=0.028 for 2410 independent non-zero reflections is in good agreement with the Mössbauer results. The $[Fe(CH_3CO_2Et)_6]^{2+}$ cations occupy centers of symmetry and the Fe^{2+} ions are octahedrally coordinated by six carbonyl oxygen atoms of six ethyl acetate molecules.

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