

Photoreactivity of Titanocene Pentasulfide

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The electronic spectrum of Cp_2TiS_5 shows a long-wavelength absorption at $\lambda_{\text{max}} = 492$ nm which is assigned to the lowest-energy $\text{S}_5^{2-} \rightarrow \text{Ti}^{\text{IV}}$ ligand-to-metal charge transfer (LMCT) transition. The photolysis of the complex in CH_2Cl_2 leads to the formation of Cp_2TiCl_2 and elemental sulfur. It is suggested that LMCT excitation initiates a reductive elimination with the extrusion of S_5 while the reduced titanocene is reoxidized by the solvent.

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