

Structure of $[\mu\text{-S}_2\{\text{Ru}(\text{PCy}_3)(\text{'S}_4')\}]_2 \cdot 2.5 \text{ THF} \cdot 0.5 \text{ Et}_2\text{O}$ Containing Homochiral Metal Complex Fragments [$\text{'S}_4'^{2-} = 1,2\text{-Bis(mercaptophenylthio)-ethane (2-)}$]

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Crystal Structure, Ruthenium-Sulfur Complexes

A crystal of the title compound $[\mu\text{-S}_2\{\text{Ru}(\text{PCy}_3)(\text{'S}_4')\}]_2 \cdot 2.5 \text{ THF} \cdot 0.5 \text{ Et}_2\text{O}$ (**1** · 2.5 THF · 0.5 Et₂O), grown from a THF/Et₂O solution, was investigated by single-crystal X-ray analysis. **1** · 2.5 THF · 0.5 Et₂O crystallizes in the triclinic space group $P\bar{1}$ with $a = 14.209(4)$, $b = 15.390(4)$, $c = 19.526(6)$ Å, $\alpha = 111.29(2)$, $\beta = 100.43(2)$, $\gamma = 95.65(2)^\circ$, and $Z = 2$. The crystal structure was solved by direct methods ($wR_2 = 0.1520$ for 12565 reflections; $R_1 = 0.0507$ for 9205 observed reflections). The molecular structure of **1** · 2.5 THF · 0.5 Et₂O is characterized by a *trans* $\eta^1\text{-}\eta^1\text{-S}_2$ bridge connecting two homochiral $[\text{Ru}(\text{PCy}_3)(\text{'S}_4')]$ fragments. The S-S bond length of 1.982(2) Å and a mean Ru-S(bridge) distance of 2.234(2) Å indicate partial double bond character of these bonds. The RuSSRu unit in **1** · 2.5 THF · 0.5 Et₂O is a chromophore as indicated by its UV spectrum and can be described by a delocalized 4c-6e π system.