Synthesis, Structure and Electrochemistry of
$[\text{Ru}_2(\text{S}_2\text{CNMe}_2)_3(\mu_3-\text{S}_2\text{CNMe}_2)_2]_2[\text{Mo}_6\text{O}_{19}] \cdot 2\text{CH}_3\text{COCH}_3$

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Reaction of MoO$_2$(S$_2$CNMe$_2$)$_2$ with RuCl$_3$$ \cdot $xH$_2$O in acetone at reflux afforded $[\text{Ru}_2(\text{S}_2\text{CNMe}_2)_3(\mu_3-\text{S}_2\text{CNMe}_2)_2]_2[\text{Mo}_6\text{O}_{19}] \cdot 2\text{CH}_3\text{COCH}_3$ (1$ \cdot $2CH$_3$COCH$_3$) which was characterized by single-crystal X-ray diffraction to show a dinuclear ruthenium-dithiocarbamate species as cation and hexamolybdate as counter anion. The $[\text{Ru}_2(\text{S}_2\text{CNMe}_2)_3(\mu_3-\text{S}_2\text{CNMe}_2)_2]^{2+}$ cation may be considered as a combination of $[\text{Ru}(\text{S}_2\text{CNMe}_2)_3]^{+}$ with a $\text{cis}$- $[\text{Ru}(\text{S}_2\text{CNMe}_2)_2]^{2+}$ species, and the Lindqvist anion $[\text{Mo}_6\text{O}_{19}]^{2-}$ is located on an inversion center between two cations. Spectroscopic properties along with the electrochemistry of compound 1$ \cdot $2CH$_3$COCH$_3$ are reported.

Key words: Ruthenium, Dithiocarbamate, Hexamolybdate, Synthesis, Crystal Structure, Electrochemistry