Reactions of substituted hydrazines with vanadium(III) compounds: crystal structures of $[NH_2Me_2]_2[VCl_3)_2(\mu\text{-}NNMe_2)_3]$, $[V(OC_6H_3Pr^i{}_2\text{-}2,6)_3(NH_2NMe_2)_2]$ and $[V(OC_6H_3Pr^i{}_2\text{-}2,6)_3(NH_2NMePh)_2]$.

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Streszczenie

Reaction of $Me_3SiNHNMe_2$ with $[VCl_3(PMePh_2)_2]$ or $[VCl_3(thf)_3]$ (thf = tetrahydrofuran) gave the triply hydrazide-bridged complex $[NH_2Me_2]_2[(VCl_3)_2(\mu\text{-}NNMe_2)_3]$**1** the crystal structure of which has been determined. Cyclic voltammetry shows **1** to have $E_{1/2}{}^{ox}= 0.30$ V (reversible at –35 °C) and$E_2{}^{ox}= 1.35$ V (*vs.* ferrocene–ferrocenium). Cation exchange gave $[PPh_4]_2[(VCl_3)_2(\mu\text{-}NNMe_2)_3]$ and reaction with $Li(SC_6H_2Pr^i{}_3\text{-}2,4,6)$ gave $[NH_2Me_2]_2[\{V(SC_6H_2Pr^i{}_3\text{-}2,4,6)_3\}_2(\mu\text{-}NNMe_2)_2]$. Treatment of $[V(OC_6H_3Pr^i{}_2\text{-}2,6)_4Li(thf)]$ with NH_2NMe_2 gave the low-melting compound $[V(OC_6H_3Pr^i{}_2\text{-}2,6)_3(NH_2NMe_2)_2]$, shown by a structure determination to be essentially trigonal bipyramidal, with axial hydrazine ligands. The analogue $[V(OC_6H_3Pr^i{}_2\text{-}2,6)_3(NH_2NMePh)_2]$ has also been prepared and shown to have a similar structure.

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