Title: Reactivity of ferrocene distibane

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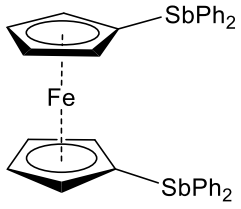
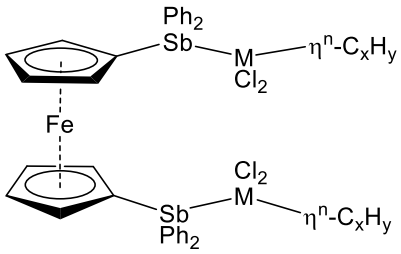
Abstract: The aim of this bachelor thesis is preparation of 1,1′-bis(diphenylstibino)ferrocene (**L**), an antimony analogue of the widely studied ligand 1,1′-bis(diphenylphosphino)ferrocene and study into its coordination properties. Two ruthenium(II) (**1**, **3**) and two rhodium(III) complexes (**2**, **4**) were prepaired, in which the ligand **L** coordinates as bridging or chelating ligand. Two ruthenium(II) and one rhodium(III) precursors with π-coordinated arene ligands were used for the preparation of complexes. When preparing chelate complexes, sodium hexafluorophosphate was also necessary. All complexes were characterised by NMR spectroscopy, mass spectrometry, elemental analysis and crystal structure was determined by X-ray structural analysis. The structures of the stibine complexes were compared with their analogs resulting from 1,1′-bis(diphenylphosphino)ferrocene.

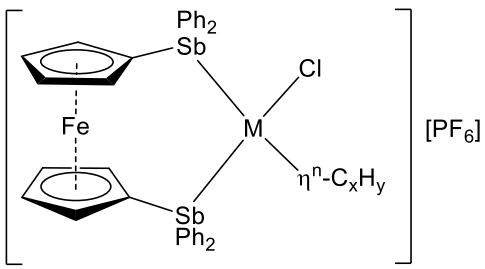



**L**

| Complex | M | $\eta^n$-$C_xH_y$ |
|---|---|---|
| **1** | Ru | $\eta^6$-*p*-cymene |
| **2** | Rh | $\eta^5$-$C_5Me_5$ |
| **3** | Ru | $\eta^6$-*p*-cymene |
| **4** | Rh | $\eta^5$-$C_5Me_5$ |




**1**, **2**




**3**, **4**

Key words: ferrocene, stibines, complexes, ruthenium, rhodium, structure elucidation