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Diastereoselective Coordination of Chiral Phosphine Substituted Thioamide Ligands

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Diastereoselective Coordination of Chiral Phosphine Substituted Thioamide Ligands

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Homochiral thioamides are forming diastereomeric molybdenum and tungsten complexes in different ways (type 1-3) and different stereosclectivities (1 and 2: >99%de , 3:0%de). The dissolved complexes 1 epimerized slowly at roomtemperature.

$$[M^*] \stackrel{S}{\underset{Ph}{\overset{}{=}}} C = NR^* \qquad [M^*] \stackrel{S}{\underset{R^*}{\overset{}{=}}} C - P(0) Ph_2 \qquad [M^*] \stackrel{S-C=NR^*}{\underset{S=PPh_2}{\overset{}{=}}}$$

The complex 6 results from the coordination of the thio-acetamide 4. Because this reaction is accompanied by tautomerisation of 4, the original carbon-chirality (C*) gets lost.