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# A Comparative Study of the Cyclic Chlorophosphites with $C_2$ -Symmetrical Organic Fragments as the Reagents for Enantiomeric Composition Control of the Chiral Alcohols

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The <sup>31</sup>P NMR method is intensively used for enantiomeric composition control during the last years [1]. Among all other derivatizing agents the C<sub>2</sub>-symmetrical ones have some advantages.

In the present communication the number of cyclic chlorophosphites  $\underline{1a}$  -  $\underline{1f}$  were investigated in the sequence of the following reactions with the uniform set of chiral alcohols R\*OH:

$$X \stackrel{O}{\longrightarrow} P-CI + R^*OH \longrightarrow X \stackrel{O}{\longrightarrow} P-OR^* \longrightarrow X \stackrel{[Y]}{\longrightarrow} Q \stackrel{Y}{\longrightarrow} 3, Y = 0$$

$$1 \qquad 2 \qquad \qquad 2 \qquad \qquad 4, Y = S$$

$$X \stackrel{H_3C}{\longrightarrow} Ph \qquad EtO_2C \qquad Me_2NOC \qquad \qquad 0$$

The analysis of the diastereomeric composition of the compounds  $\underline{2-4}$  by the <sup>31</sup>P NMR reveals the original enantiomeric composition of the analysed R\*OH. The P(III) derivatives  $\underline{2}$  show the better diastereomeric shift dispersions than the P(IV) compounds. Based on the availability, easiness to handle, <sup>31</sup>P NMR parameters, and diastereoselectivity we can recommend the reagents  $\underline{1d}$  and  $\underline{1e}$  for the practical use for express analysis of the enantiomeric excess of the chiral alcohols.

#### References

[1] R. Hulst, R.M. Kellogg, B.L. Feringa, Rec. trav. chim., 114, 115-138, (1995).