

Contents

1. Foundations of Asymmetric Catalysis. General Introduction	7
2. Carbohydrate. Preview	15
3. Introduction to Carbohydrate-Based Ligands	19
3.1. Ligands with homodonor phosphorus atoms	24
3.1.1. Phosphines	25
3.1.1.1. Monophosphines	25
3.1.1.2. Diphosphines	28
3.1.2. Phospholanes	37
3.1.3. Phosphinites	41
3.1.3.1. Monophosphinites	42
3.1.3.2. Diphosphinites	45
3.1.4. Phosphites	56
3.1.4.1. Monophosphites	56
3.1.4.2. Diphosphites	61
3.1.5. Phosphoroamidites	67
3.1.6. <i>P,P'</i> -mixed ligands	69
3.2. Ligands with heterodonor atoms	73
3.2.1. <i>P,S</i> -chelating ligands	74

3.2.2. <i>P,N</i> -chelating ligands	79
3.2.3. <i>P,O</i> -chelating ligands	89
3.2.4. Tridentate type ligands	93
4. Conclusions	95