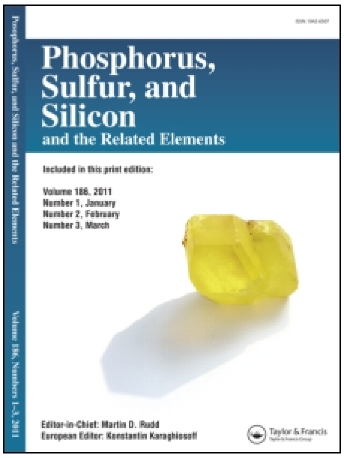

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# HYDROSILYLATION OF UNSATURATED SULPHIDES AND MERCAPTANS

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# HYDROSILYLATION OF UNSATURATED SULPHIDES AND MERCAPTANS

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Some features of the hydrosilylation reaction of unsaturated sulphur-containing compounds such as divinylsulphide[*], diallylsulphide, ethylvinylsulphide and allylmercaptan with triethyl- and triethoxysilanes catalyzed by $H_2PtCl_6 \cdot 6H_2O$, $(Ph_3P)RhCl$, $(Ph_3P)_3Rh(CO)H$, $Co_2(CO)_3$, $(PhCN)_2PdCl_2$ $Ph_3P$ have been studied for the first time.

The hydrosilylation process of the compounds studied is not regeoselective, as a rule, to give a mixture of isomer adducts according and opposite to Farmer's rule.

Together with a number of normal side processes such as redox reactions, disproportionation of the starting hydrosilanes, dehydrocondensation, hydration and polymerization of olefines, the hydrosilylation is accompanied by first recognized S-C bond cleavage specific for unsaturated sulphur-containing compounds.

The cleavage reaction of S-C bonds is common to conjugated systems where mainly $S\text{-}C_{Vin}$ bonds are cleaved. The substitution of platinum and rhodium catalysts by the palladium one increases regeoselectivity of the process, decreases the number of side reactions not excluding the $S\text{-}C_{Vin}$. cleavage. The use of freshly prepared Speier's catalyst containing no reduced platinum (Pt", $Pt^0$) causes polymerization of unsaturated sulphides.

The possible mechanism of the process investigated is discussed.

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[*] Divinylsulphide was prepared by the method developed by B.A.Trofimov and S.V.Amosova (U.S.Patent 3887623, 1975) who kindly gave the reagent to the authors.