Tosylation and Characterization of Lignin in Water

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Supplementary data on experimental conditions

Table 1 represents the different specific conditions used in this study for 2.5 g of lignin (9.77 mmol of OH). A 200 ml of deionized water was used for each condition.

Table 1. Different Experimental Conditions Using During the Tosylation Reaction

TsCl/OH	Et_3N/OH	reaction time (h)
1	0	24
2	0	24
4	0	24
1	1	24
2	3	1/2/4/24/48
4	8	24
4	12	24

The concentrations of the hydroxyl groups of unmodified lignin obtained by NMR ^{31}P are collected in Table 2.

Table 2. Concentration of Aliphatic and Phenolic Hydroxyl Groups Present in the Samples of Unmodified Lignin by NMR ^{31}P

	OH (mmol.g^{-1})					
sample	phenolic H	phenolic G	phenolic S	condensed phenolic	total phenolic	aliphatic
lignin	0.07	1.42	0.00	1.15	2.64	1.27

* Phenolic OH groups : (H) p-Hydroxyphenyl; (G) Guaiacyl; (S) Syringyl