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## P-Mannich Reaction on Wool Fibre for Activation in Dyeing

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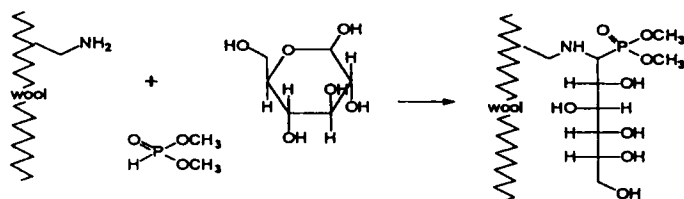
## P-Mannich Reaction on Wool Fibre for Activation in Dyeing

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Chemical modification of wool by means of dimethyl phosphite and D-glucose results in an increase in dye pick-up, while colour and light fastness properties did not decrease, in fact some features became more favourable. Our investigations showed that increase in fibre diameter occurred, which could rise the rate of dye penetration. Amino acid analysis of the treated wool sample showed a decrease in lysine and arginine content, which allows of supposing covalent bond formation between dimethyl phosphite, D-glucose and the amino and guanidino groups of wool.<sup>1</sup>

We assume, that a P-Mannich type reaction occurs resulting in amino phosphonic acid incorporating the polyol chain of the sugar.



<sup>31</sup>P-NMR analysis from the reaction mixture of free lysine or arginine, dimethyl phosphite and D-glucose after one hour heating at 70°C in aqueous solution showed signals characteristic to P-C bond.

<sup>1</sup>L. Trézl et al., *JSDC*, 113, 101, (1997).