# Palladium-catalyzed telomerisation of 1,3-dienes and amines towards renewable surfactants

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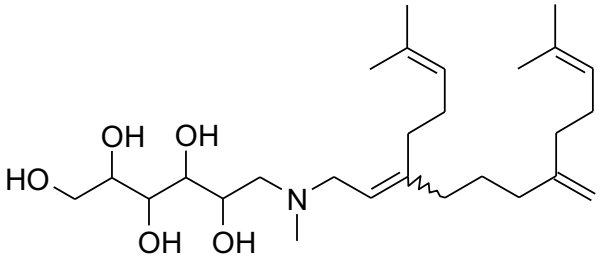
A key challenge in the synthesis of non-ionic surfactants is the opposite polarity of substrates and the connected challenge of using homogenous catalysis. The telomerisation of 1,3-dienes with functionalized nucleophiles presents an atom efficient and selective synthesis of potential non-ionic surfactants. We present the telomerisation of β-myrcene with N-Methylglucamine (NMG) to $C_{20}$-N-alkylated polyols, which show surface activity. The use of aqueous solvent systems along with amphiphilic ligands bridges the polarity gap and generated high reactivities.[1]




Crucial for application of these synthetic pathways is the effective recycling of the homogenous palladium catalyst. In the system 1,3-butadiene/NMG phase separation is achieved by freshly added 1,3-butadiene instead of an additional solvent. This offers an elegant way of catalyst recycling.[2]

[1] T. A. Faßbach, F. O. Sommer, A. Behr, S. Romanski, D. Leinweber, A. J. Vorholt, *Catal. Sci. Technol*, **2017**, *7*, 1650-1653.

[2] T. A. Faßbach, S. Püschel, A. Behr, S. Romanski, D. Leinweber, A. J. Vorholt, *CES*, **2018**, *18*, 122-131.

[3] T. A. Faßbach, N. Gösser, F. O. Sommer, A. Behr, X. Guo, S. Romanski, D. Leinweber, A. J. Vorholt, *Appl. Catal.*, **2017**, *543*, 173-179.