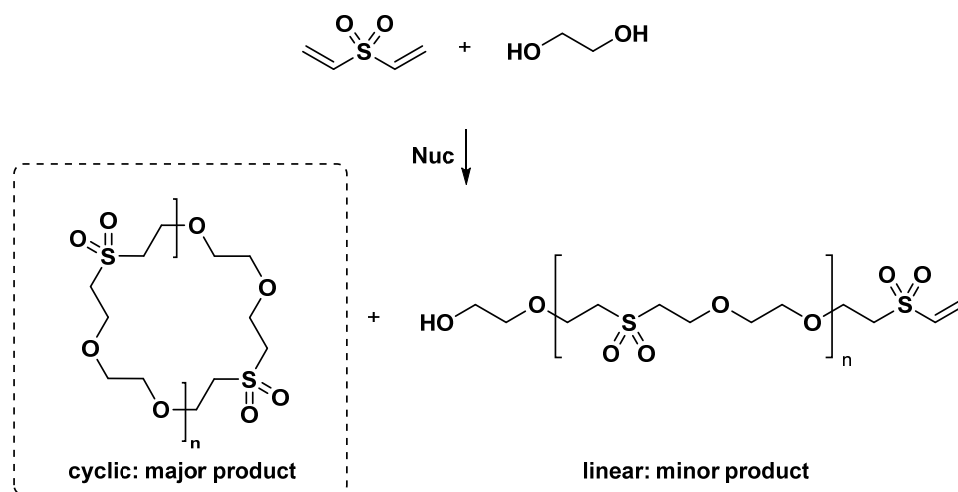


OXA-MICHAEL ADDITION POLYMERIZATION AS A TOOL IN POLYMER SYNTHESIS

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The thiol-Michael addition has been proven to be a powerful tool for preparing macromolecules from electron deficient olefins and thiols [1]. Herein, research on substituting thiols for alcohols will be presented, shedding light on the question whether the oxa-Michael addition reaction might be a useful and valuable extension to the thiol-Michael variant in polymer chemistry.



Exemplified by the reaction of divinyl sulfone as the Michael acceptor and di- or trifunctional alcohols (as the Michael-donor) induced upon addition of a proper nucleophile, the critical factors for a successful polyaddition reaction will be highlighted and a mechanistic understanding of this reaction will be developed [2].

Of particular interest is the formation of macrocyclic products under solvent-free conditions. This finding is highly counter-intuitive since macrocyclization reactions are usually performed in diluted solutions.

[1] Nair, D. P.; Podgorski, M.; Chatani, S.; Gong, T.; Xi, W.; Fenoli, C. R.; Bowman, C. N. *Chem. Mater.* **2014**, *26*, 724.

[2] Strasser, S.; Wappl, C.; Slugovc, C. *Polym. Chem.* **2017**, *8*, 1797; Strasser, S.; Slugovc, C. *Catal. Sci. Technol.* **2015**, *5*, 5091.