

## Bis(allyl)calcium – A New Type of Polar Main Group Organometallic

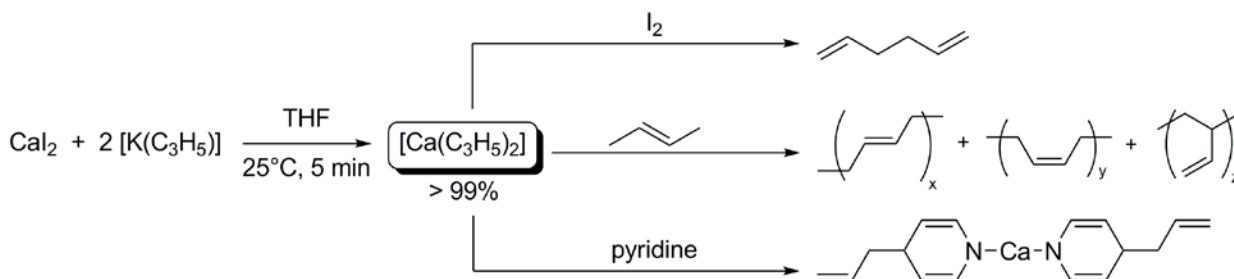
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The synthetical and catalytical potential of heavier alkaline earth organometallics has only began to unfold in the last years.<sup>[1,2]</sup> The parent compound bis(allyl)calcium  $[\text{Ca}(\text{C}_3\text{H}_5)_2]$  can be easily obtained by salt metathesis, is soluble and stable in thf and exhibits a tractable reactivity pattern as a molecular compound.<sup>[3]</sup>

Bis(allyl)calcium displays allyl homocoupling upon addition of  $\text{I}_2$  to quantitatively give 1,5-hexadiene and is active in 1,3-butadiene polymerization. Additionally,  $[\text{Ca}(\text{C}_3\text{H}_5)_2]$  reacts smoothly with pyridine to give the insertion product bis(4-allyl-4H-pyridin-1-yl)calcium, whereas 4-picoline first gives the analogous 1,4-insertion product, which is transformed to bis(pyridin-4-ylmethyl)calcium.<sup>[3b]</sup>



### References:

- [1] (a) Harder, S. *Chem. Rev.* **2010**, *110*, 3852. (b) Barrett, A. G. M.; Crimmin, M. R.; Hill, M. S.; Procopiou, M. S. *Proc. R. Soc. A* **2010**, *466*, 927. [2] Westerhausen, M.; Gärtner, M.; Fischer, R.; Langer, J.; Yu, L.; Reiher, M. *Chem. Eur. J.* **2007**, *13*, 6292. [3] (a) Jochmann, P.; Dols, T.; Spaniol, T. P.; Perrin, L.; Maron, L.; Okuda, J. *Angew. Chem. Int. Ed.* **2009**, *48*, 5715–5719. (b) *Angew. Chem. Int. Ed.*, accepted.