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Mo- and W-based metathesis catalysts for academic research, industrial R&D and production

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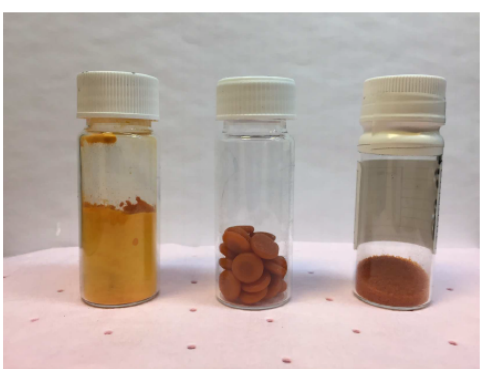
Olefin metathesis is one of the most powerful and versatile chemical transformation in organic synthesis for preparation of compounds of diverse interests by formation of new carbon-carbon bonds.

Molybdenum and tungsten-based well-defined catalysts can be synthesized generally in 5 steps from commercially available, cheap starting materials and can be readily scaled up to tens of kilos even under industrial conditions.

It will be shown that these complexes are highly active, thus can easily give turnover numbers (TONs) in the range of 40-90.000, or occasionally over 1 million. In addition, they can possess remarkable *Z* and also enantioselectivity and by choosing the right catalyst both enantiomer of the chiral compound will be readily available.

As they are moisture sensitive like most of the organometallic reagents, we developed paraffin protected, pre-weighted and ready-to-use pellets, which are sufficiently stable to work with them on the bench, thus practical in the laboratory, as well as in a pilot or plant operation.



Homogenous, paraffin formulated and supported Mo-based complexes

Moreover, Mo-/W-alkylidenes can be covalently attached to silica support which enables their use in flow chemistry processes.

Their versatility and usefulness will be demonstrated by examples in which Mo-/W-based complexes are used in large scale industrial processes.

Keywords: olefin metathesis, molybdenum, tungsten, usefulness