





Olefin Metathesis is a flexible and efficient method for making carbon–carbon bonds that has found widespread application in the chemical industry for the efficient production of pharmaceuticals. The reaction, for which Yves Chauvin of the Institut Français du Pétrole, Robert H. Grubbs of CalTech, and Richard R. Schrock of MIT received the 2005 Nobel Prize in Chemistry, has changed the way chemists assemble molecules.

Commercial catalysts for this reaction are traditionally based on Ruthenium, however, when applicable, the use of Molybdenum (Mo) or Tungsten (W) offer greater advantages.

In 2012, Uquifa Hungary, a manufacturer of active pharmaceutical ingredients (APIs) and intermediates for the pharmaceutical and animal health industries, started a collaboration with XiMo Inc. a company founded by Professor Schrock and colleagues to develop a scalable process to make these catalysts and the reactions available to support commercial production. Today, Uquifa's team can produce these catalysts at multi-kilogram scale and perform metathesis to manufacture products at the metric ton scale.

Figure 1. Olefin Metathesis: Ring Closing Metathesis, Ring Opening Metathesis, Cross Metathesis and Ethenolysis reactions.





Molybdenum and Tungsten are very specific to the metathesis reaction and do not generate unwanted impurities.

Whether Olefin Metathesis reactions fit your organization's process or not, the Uquifa team will utilize their expertise to find a solution for your program's process challenges and propose a route that is robust, scalable, and that will strengthen your product's position to help you reach your drug development goals.

Since its inception over 80 years ago, Uquifa has perfected the art of developing synthetic processes early on in the life of a program, taking into account key attributes necessary for it to transcend the various clinical phases with minimal re-work and optimization needed. Uquifa supports programs from preclinical development to commercial manufacturing and is committed to solving process challenges while anticipating future needs.

## **About Uquifa**

With over 80 years of experience, UQUIFA's business model is based on a combination of a quality manufacturing platform and track record of service and reliability. UQUIFA is a manufacturer of Active Pharmaceutical Ingredients (APIs) and intermediates for the pharmaceutical and animal health industries globally. The Company has 4 manufacturing sites (2 in Spain, 1 in Hungary and 1 in Mexico) with strict adherence to all regulatory norms. These sites operate under cGMP conditions and have been inspected and approved by leading global pharmaceutical companies and regulatory authorities, including the USFDA.

To learn more about how Uquifa can help your organization bring products to market, visit www.uquifa.com.

