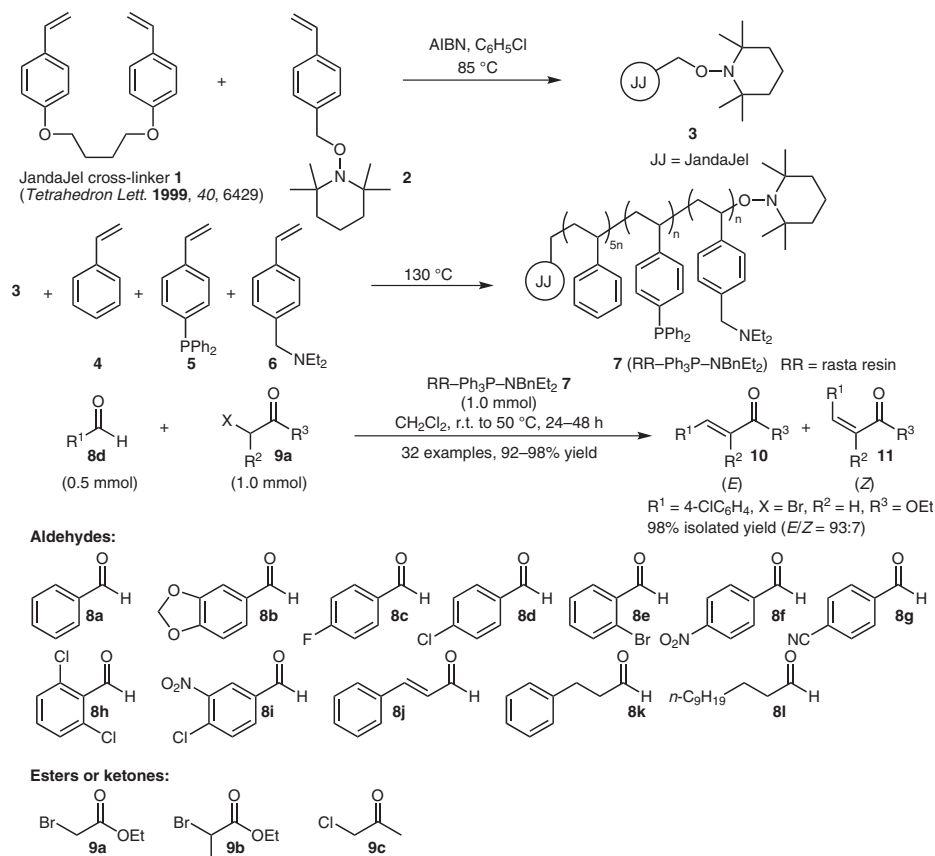


## Wittig Reactions Using a Bifunctional Polymeric Reagent



**Significance:** The rasta resin supported phosphine and amine reagent (RR-Ph<sub>3</sub>P-NBnEt<sub>2</sub>, **7**) was synthesized and applied to the one-pot Wittig reaction. Thus, the heterogeneous core **3** was prepared from JandaJel cross-linker **1** and **2** according to the reported procedures (P. H. Toy and co-workers *Synlett* **2010**, 1997). The core polymer **3** underwent living polymerization with a 5:1:1 molar mixture of **4**, **5**, and **6** to furnish the polymeric reagent **7**. The one-pot Wittig reaction of aldehyde **8d** with  $\alpha$ -bromo ester **9a** was carried out with the RR-Ph<sub>3</sub>P-NBnEt<sub>2</sub> **7** to give 98% yield of a mixture of (*E*)- and (*Z*)-ethyl 3-(4-chlorophenyl)acrylate (**10** and **11**) in a ratio of 97:3.

**Comment:** This is the first example of a bifunctional polymer bearing two distinct reagent groups and its use in a one-pot Wittig reaction. The one-pot Wittig reactions of several aldehydes **8** with  $\alpha$ -halo esters and ketones **9** were examined under similar reaction conditions to give the corresponding Wittig products in high yield (32 examples, 92–98% yield). In all cases tested, only filtration and solvent removal were required to obtain a pure mixture of alkene product isomers.