**Category**

**Polymer-Supported Synthesis**

**Key words**

**1,2,3-triazoles**

**sodium azide**

**terminal alkynes**

**polystyrene resin**

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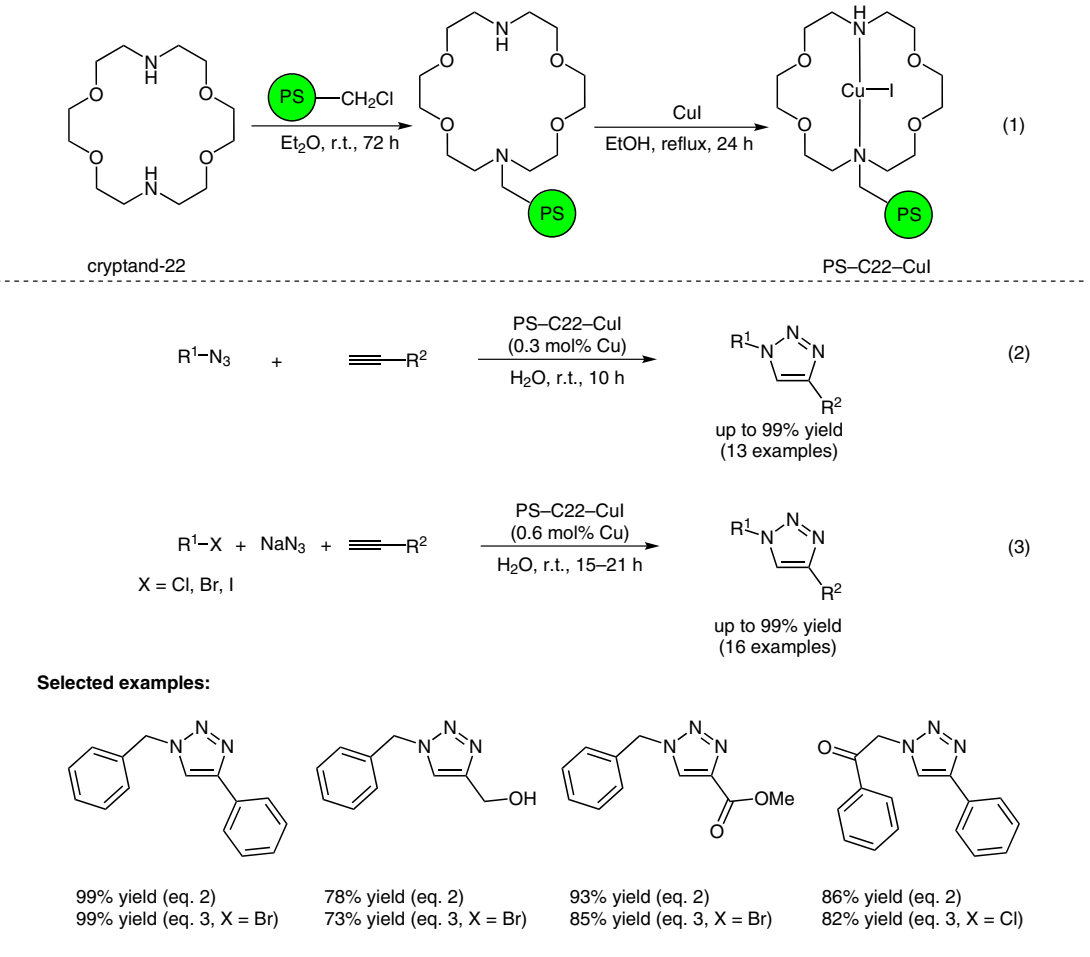
Polystyrene Resin-Supported CuI–Cryptand-22 Complex: A Highly Efficient and Reusable Catalyst for Three-Component Synthesis of 1,4-Disubstituted 1,2,3-Triazoles Under Aerobic Conditions in Water

*Tetrahedron* **2014**, *70*, 8885–8892.

# Click Reaction Using Polymer-Supported CuI–Cryptand-22




**Significance:** A polystyrene resin supported CuI–cryptand-22 complex (PS–C22–CuI) was prepared by mixing chloromethylated polystyrene with cryptand-22 in diethyl ether, followed by the complexation with CuI in ethanol (eq. 1). PS–C22–CuI catalyzed the click reaction of azides with terminal alkynes (eq. 2, method A) or the one-pot three-component reaction from alkyl halides, sodium azide, and terminal alkynes (eq. 3, method B) to give the corresponding 1,2,3-triazoles in up to 99% yield.

**Comment:** The PS–C22–CuI complex was characterized by FT-IR, EDX, SEM, XPS, and TG-DTA analysis. In both methods A and B for synthesizing 1-benzyl-4-phenyl-1*H*-1,2,3-triazole, the catalyst was recovered by filtration and reused three times.

**SYNFACTS Contributors:** Yasuhiro Uozumi, Shiguang Pan
Synfacts 2015, 11(1), 0106 Published online: 15.12.2014
**DOI:** 10.1055/s-0034-1379715; **Reg-No.:** Y14514SF