



Probing tungsten-alkylidyne cyclic polymer initiator decomposition pathways with oxidants



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ARTICLE INFO

Keywords:

Alkylidyne
Alkylidene
C–C bond activation
Cyclic polymer
Oxygen atom transfer

ABSTRACT

An OCO-pincer supported tungsten(VI) alkylidyne exhibits diverse reactivity depending on the identity of the oxidizing agent and the stoichiometry of the reaction. Oxidation reactions are studied with azo, nitroso, and oxo compounds. Benzo(c)cinnoline facilitates migratory insertion of the alkylidyne carbon in the pincer backbone forming a tethered tungsten (VI) alkylidene complex. Analogous azobenzene activates a C–C bond in the *tert*–butyl group of the alkylidyne and results in a tungsten di-imido complex. Nitrosobenzene and pyridine *N*-oxide undergo oxygen atom transfer (OAT) reactions and result in tungsten oxo complexes. Reactions with