

Supplementary Information

Isoprene polymerization mediated by Vanadium-[ONNO] complexes

Yupin Phuphuak,^{a,b} Fanny Bonnet,^a Laure Vendier^{c,d} Christian Lorber,^{c,d} * Philippe Zinck^a

^a UCCS, Unité de Catalyse et Chimie du Solide, CNRS, UMR8181, ENSCL, Université de Lille, F-59652 Villeneuve d'Ascq, France

^b Department of Chemistry, Faculty of Science, Naresuan University, Phitsanulok 65000, Thailand

^c CNRS ; LCC (*Laboratoire de Chimie de Coordination*), 205 route de Narbonne, F-31077 Toulouse France (lorber@lcc-toulouse.fr)

^d Université de Toulouse ; UPS, INPT ; LCC ; F-31077 Toulouse, France

1. ¹H NMR spectra of a polyisoprene obtained using complex **6** combined to 10 eq. AlⁱBu₃ for reaction times of 2h (a, entry 21) , 4h (b, entry 22) , and 24h (c, entry 17).
2. ¹H NMR spectra of a polyisoprene obtained using complex **4** combined to 10 eq. AlⁱBu₃
3. GPC traces for entries 21, 22 and 17.
4. ¹H NMR spectra of a polyisoprene obtained using complex **6** with various equiv. AlⁱBu₃

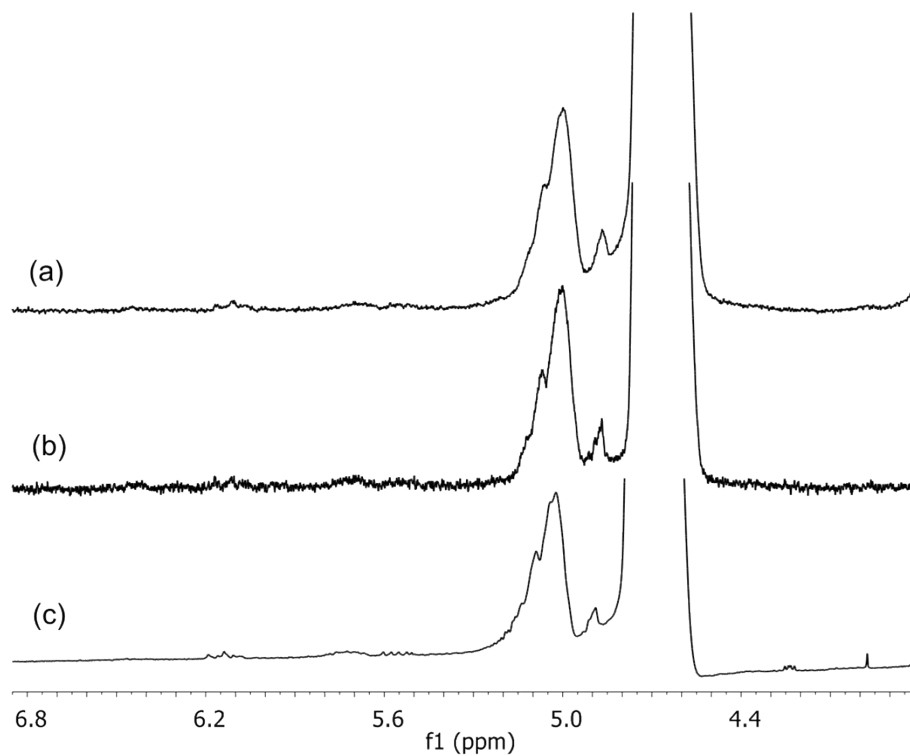


Figure SI1. ^1H NMR spectra of a polyisoprene obtained using complex **6** combined to 10 eq. Al^iBu_3 for reaction times of 2h (a, entry 21) , 4h (b, entry 22) , and 24h (c, entry 17).

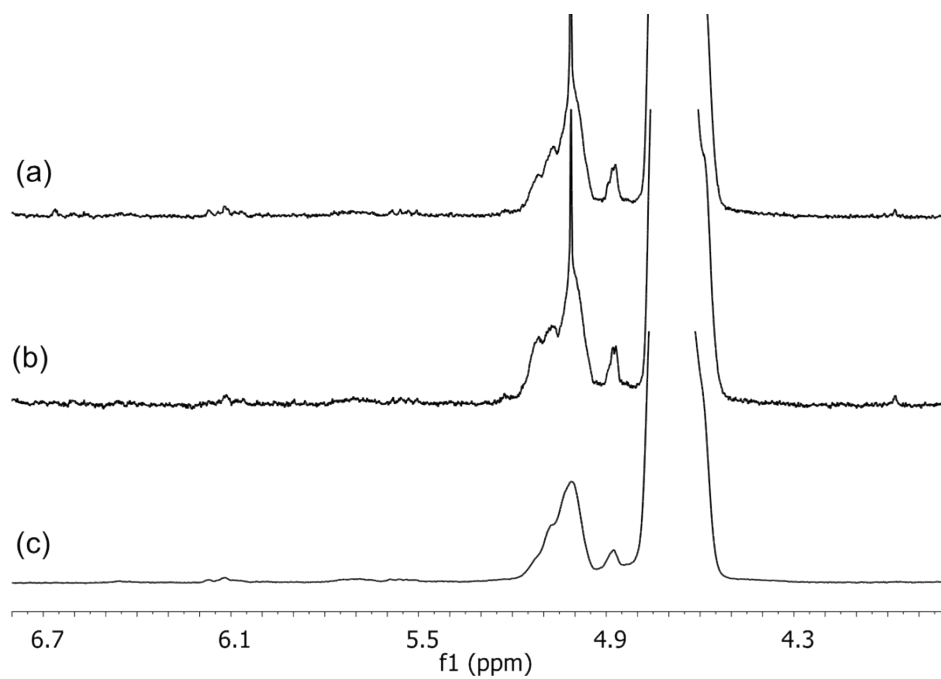


Figure SI2. ^1H NMR spectra of a polyisoprene obtained using complex **4** combined to 10 eq. Al^iBu_3 for reaction times of 2h (a, entry 19) , 4h (b, entry 20) , and 24h (c, entry 13).

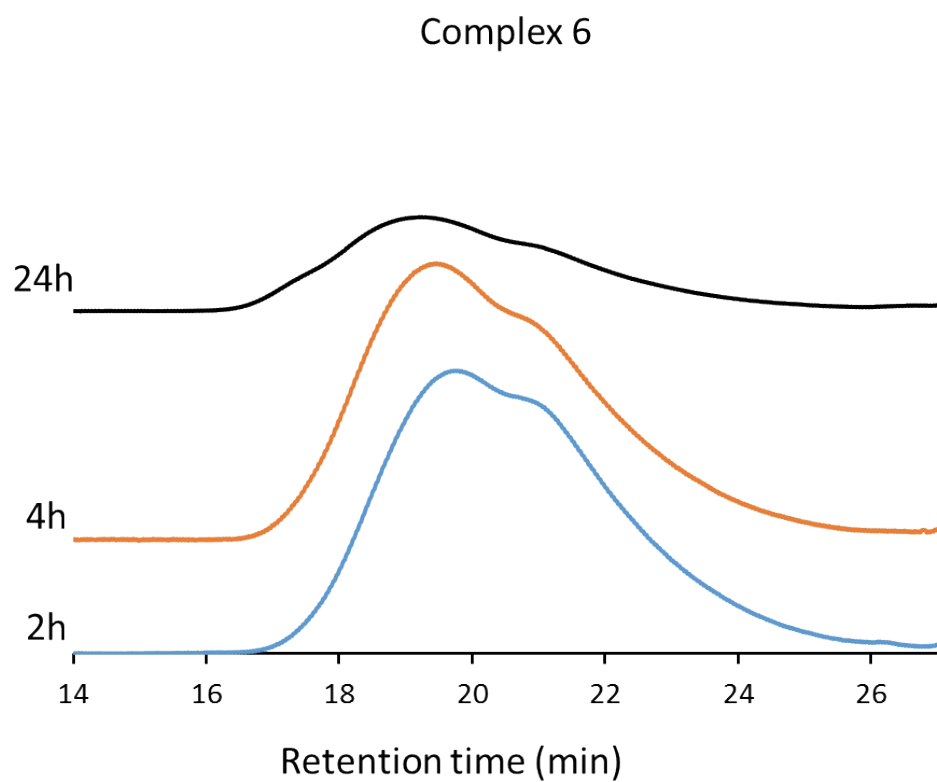


Figure SI3. GPC traces for entries 21 (2h), 22 (4h) and 17 (24h).

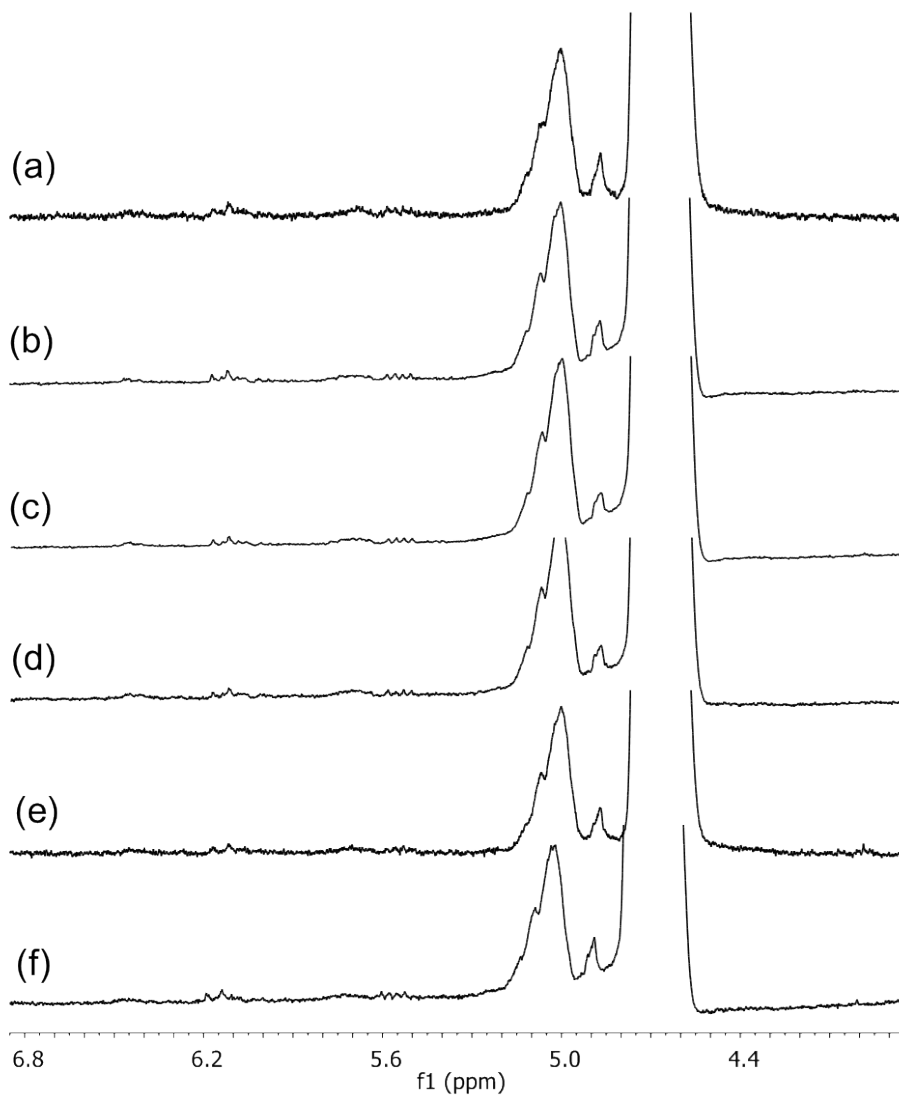


Figure SI4. ^1H NMR spectra of a polyisoprene obtained using complex **6** with various equiv. Al^iBu_3 : (a) 2 equiv., (b) 3 equiv., (c) 4 equiv., (d) 5 equiv., (e) 10 equiv., (f) 20 equiv. Reactions conditions of the manuscript with 8h reactions.