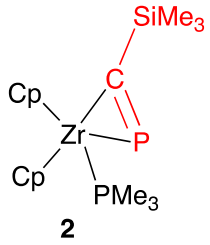
Supplementary Information

Coordination Chemistry of Trimethylsilylphosphaalkyne: A Phosphaalkyne Bearing a Reactive Substituent

Stephen M. Mansell, Michael Green and Christopher A. Russell

NMR spectra of crude reaction mixtures.



2

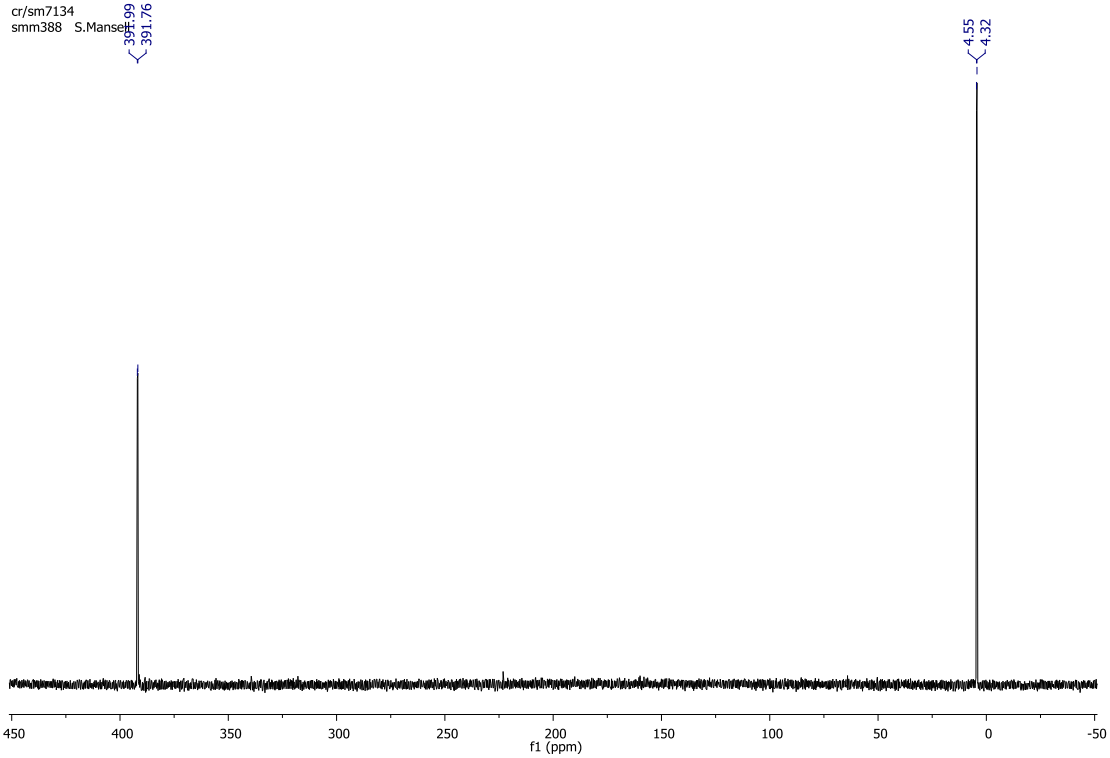


Figure S1. ^{31}P NMR spectrum of compound **2**.

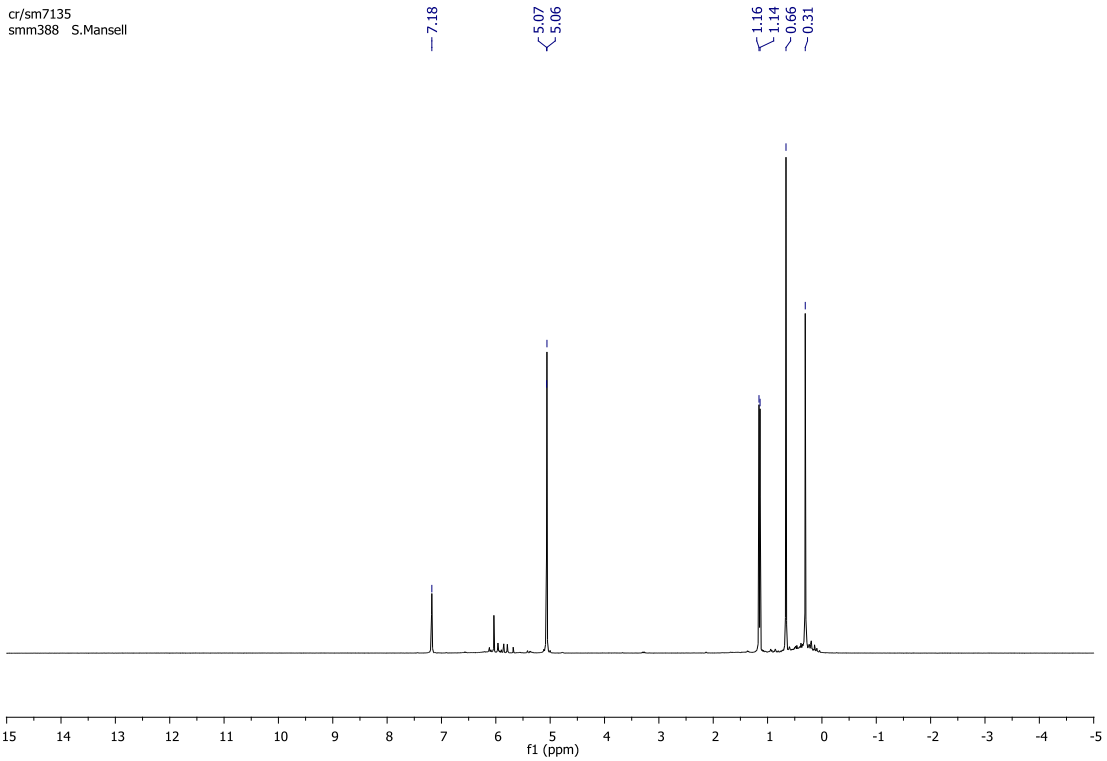
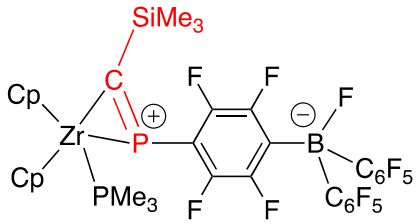


Figure S2. ^{1}H NMR spectrum of compound **2**. The peak at 0.31 is from silicon grease as an impurity.



3

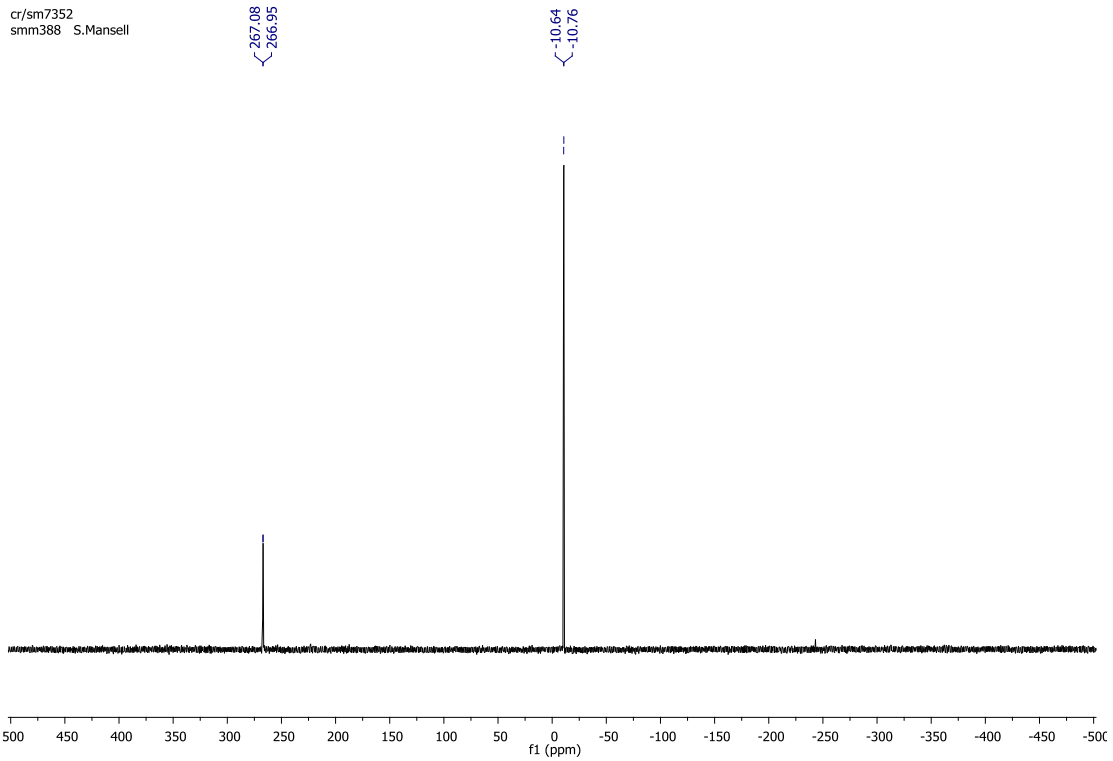


Figure S3. ^{31}P NMR spectrum of compound **3**.

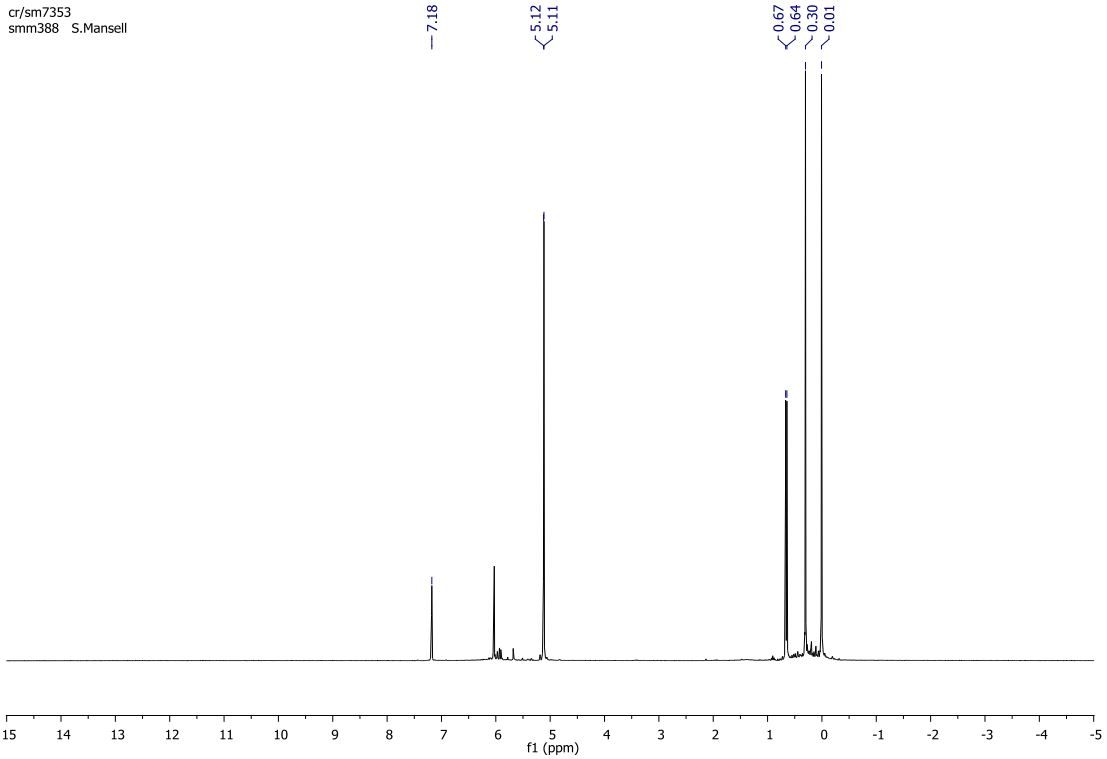


Figure S4. ^{1}H NMR spectrum of compound **3**. The peak at 0.30 is from silicon grease as an impurity.

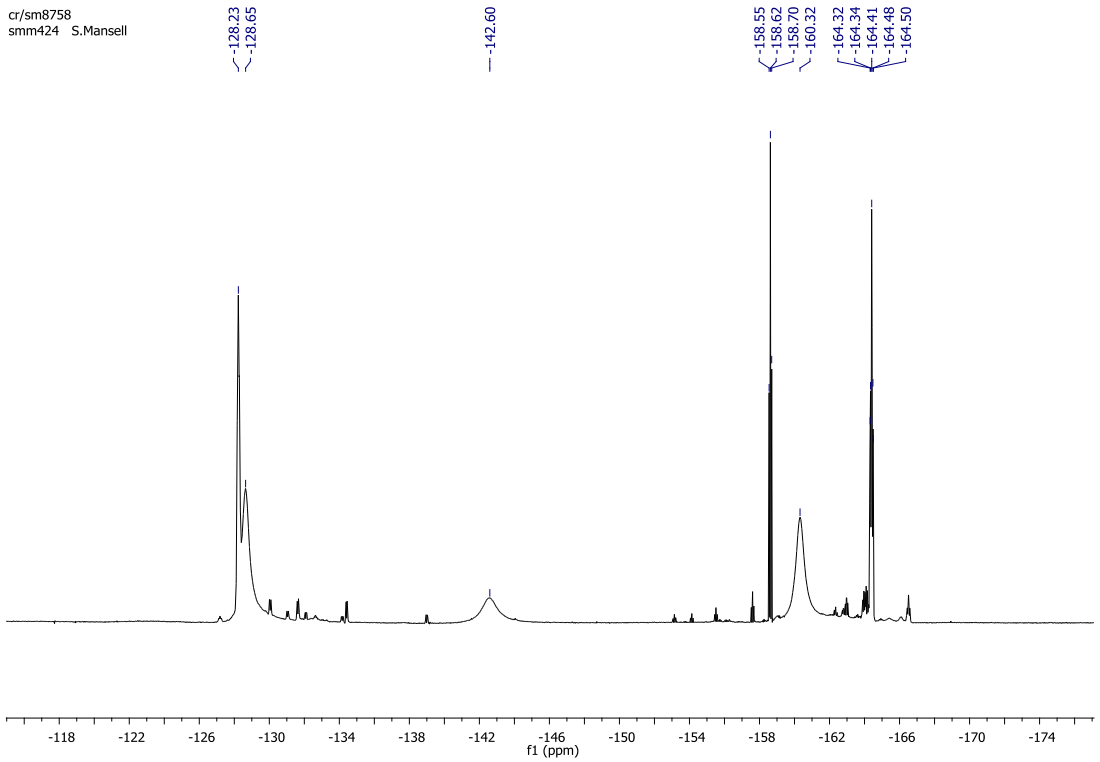
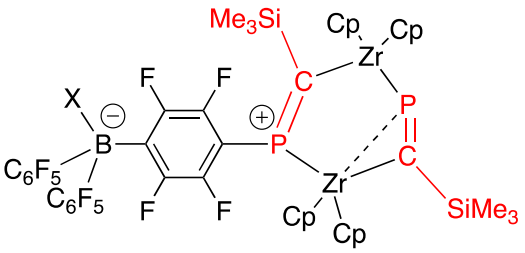


Figure S5. ^{19}F NMR spectrum of compound **3**.



4 X = 0.6 H : 0.4 F

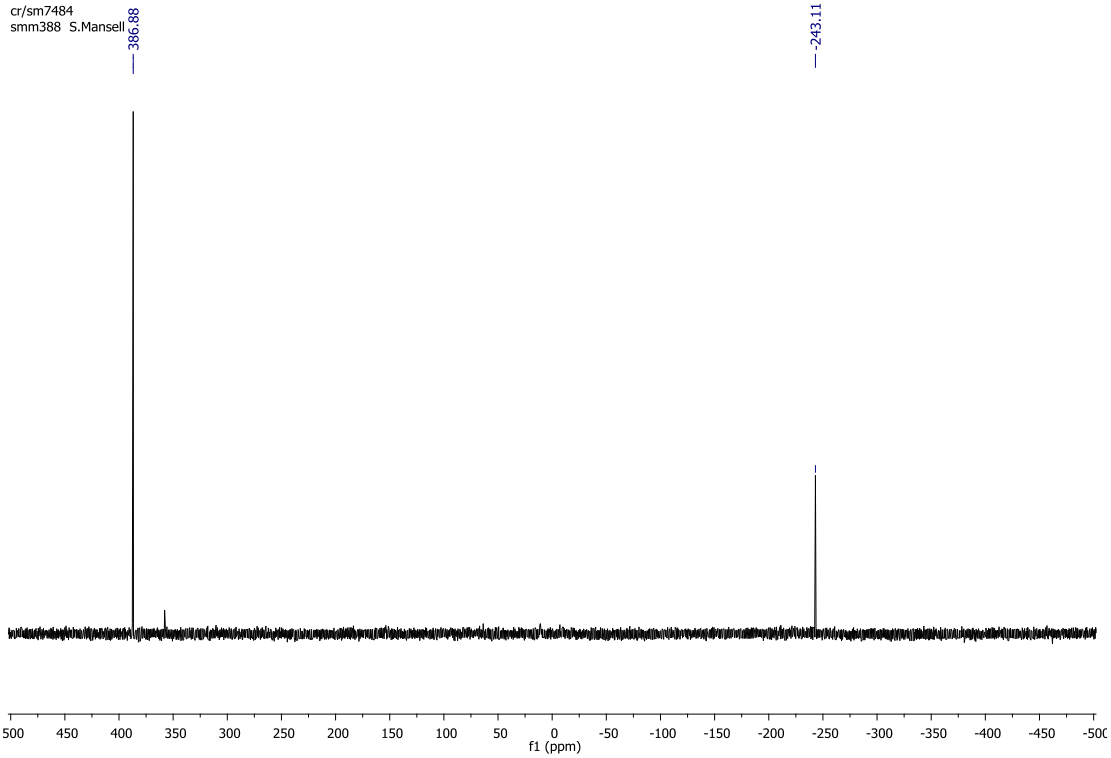


Figure S6. ^{31}P NMR spectrum of compound **4**.

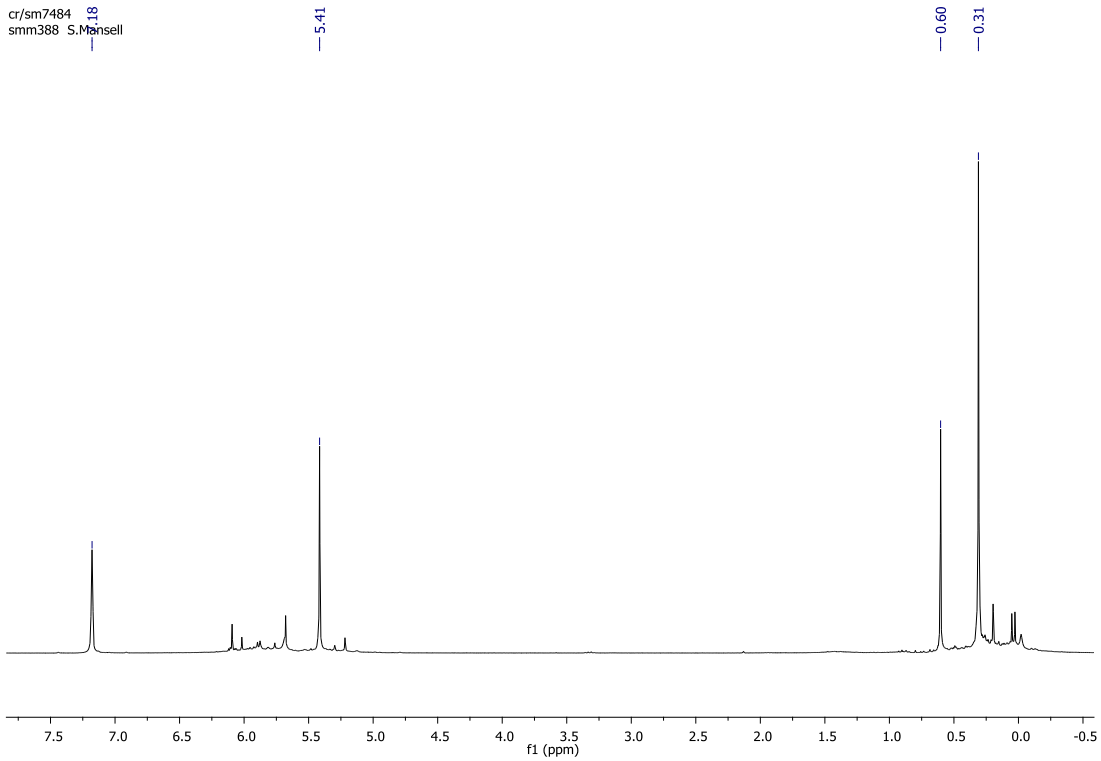
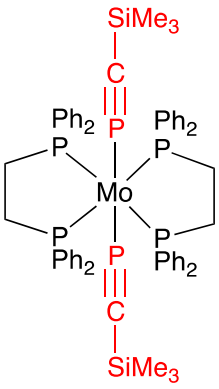


Figure S7. ^{1}H NMR spectrum of compound **4**. The peak at 0.30 is from silicon grease as an impurity.



5

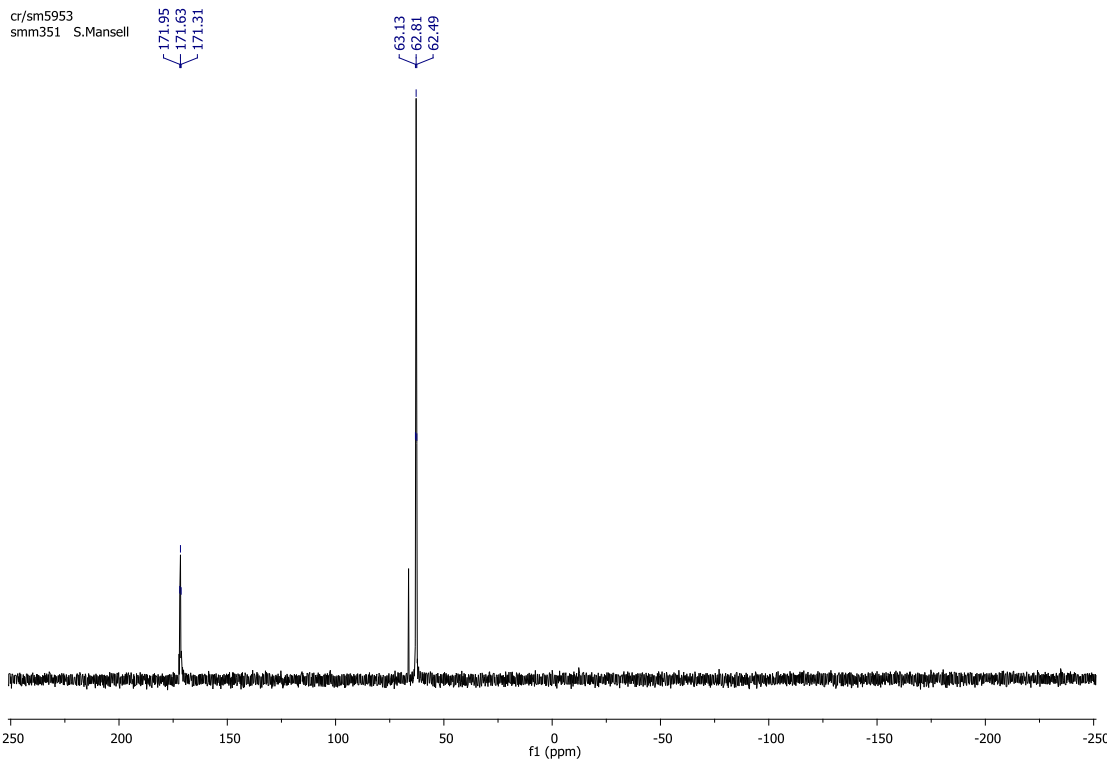


Figure S8. ^{31}P NMR spectrum of compound **5**.

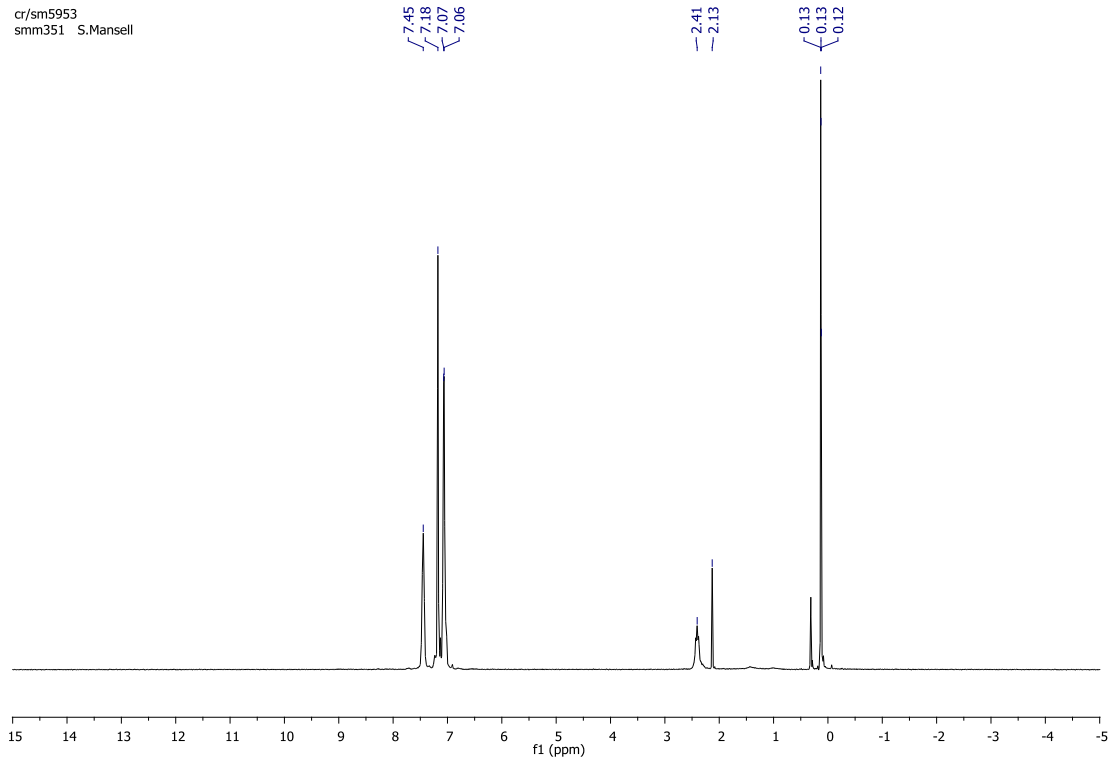


Figure S9. ^{1}H NMR spectrum of compound **5**. The resonance at 2.13 is from residual toluene.

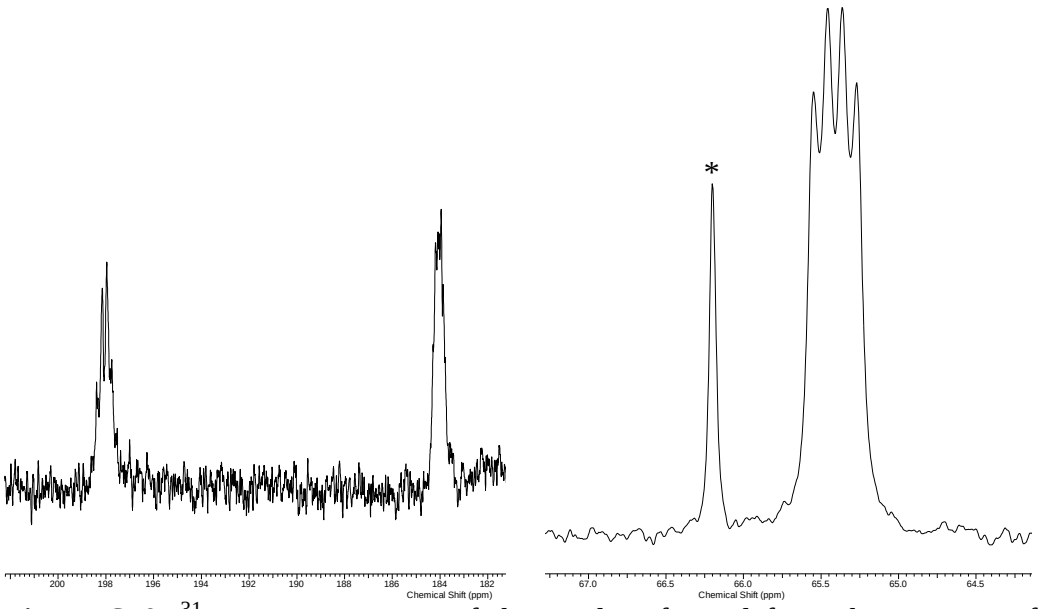
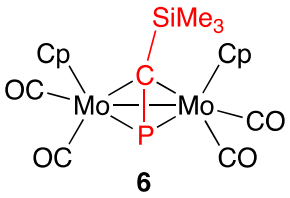


Figure S10. ^{31}P NMR spectrum of the product formed from the reaction of **5** with TBAT. * denotes $[(N{\equiv}N)_2Mo(dppe)_2]$ impurity.



6

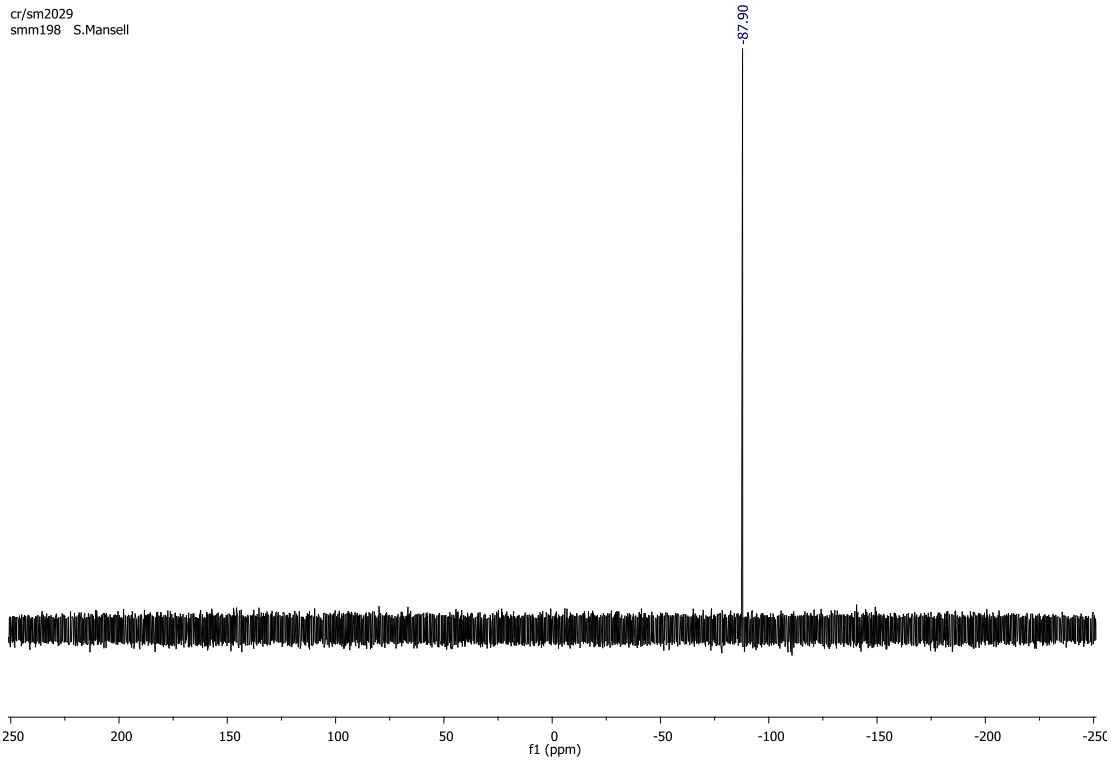


Figure S11. ^{31}P NMR spectrum of compound **6**.

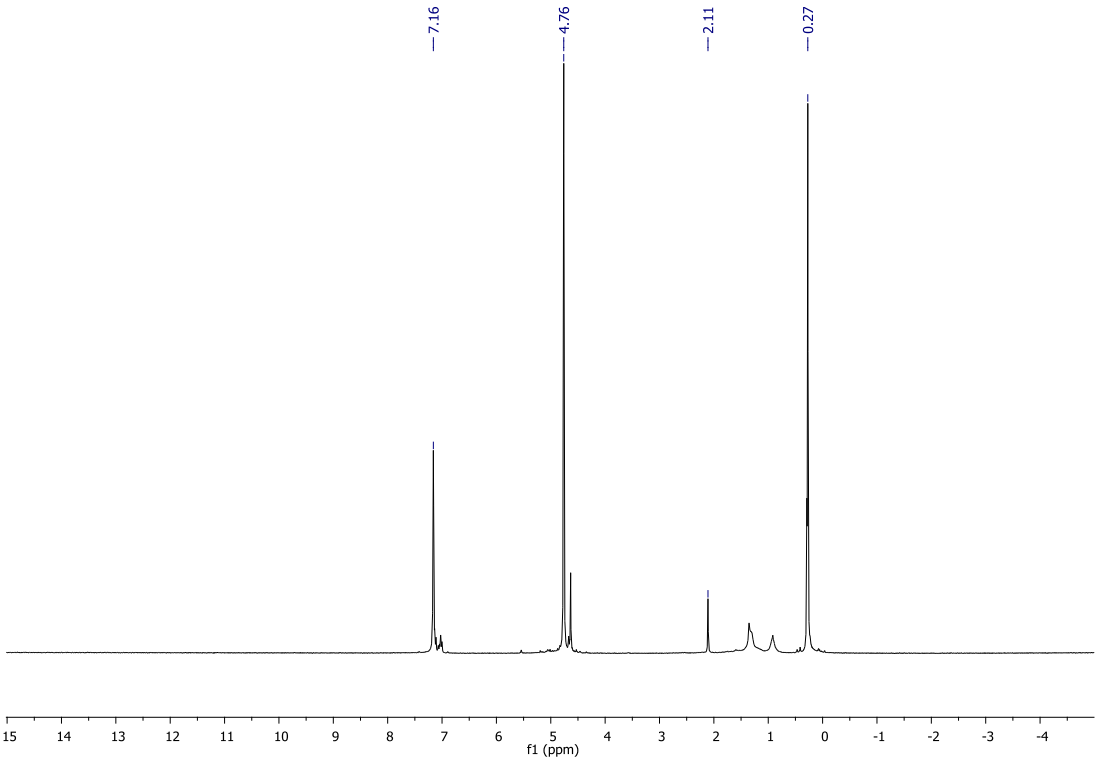


Figure S12. ^{1}H NMR spectrum of compound **6**. The resonance at 2.11 is from residual toluene.

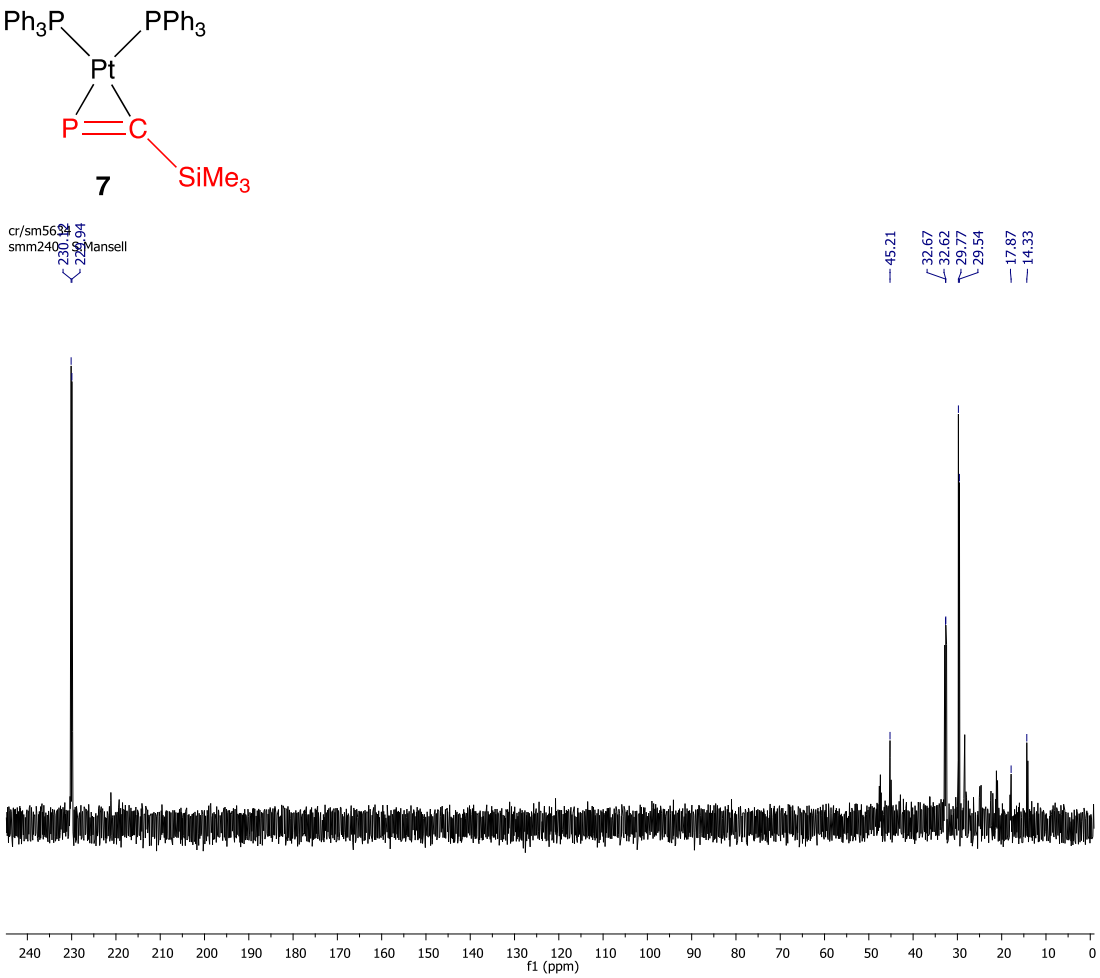


Figure S13. ^{31}P NMR spectrum of compound **7** before a substantial amount of by-products had been formed by thermal reaction.

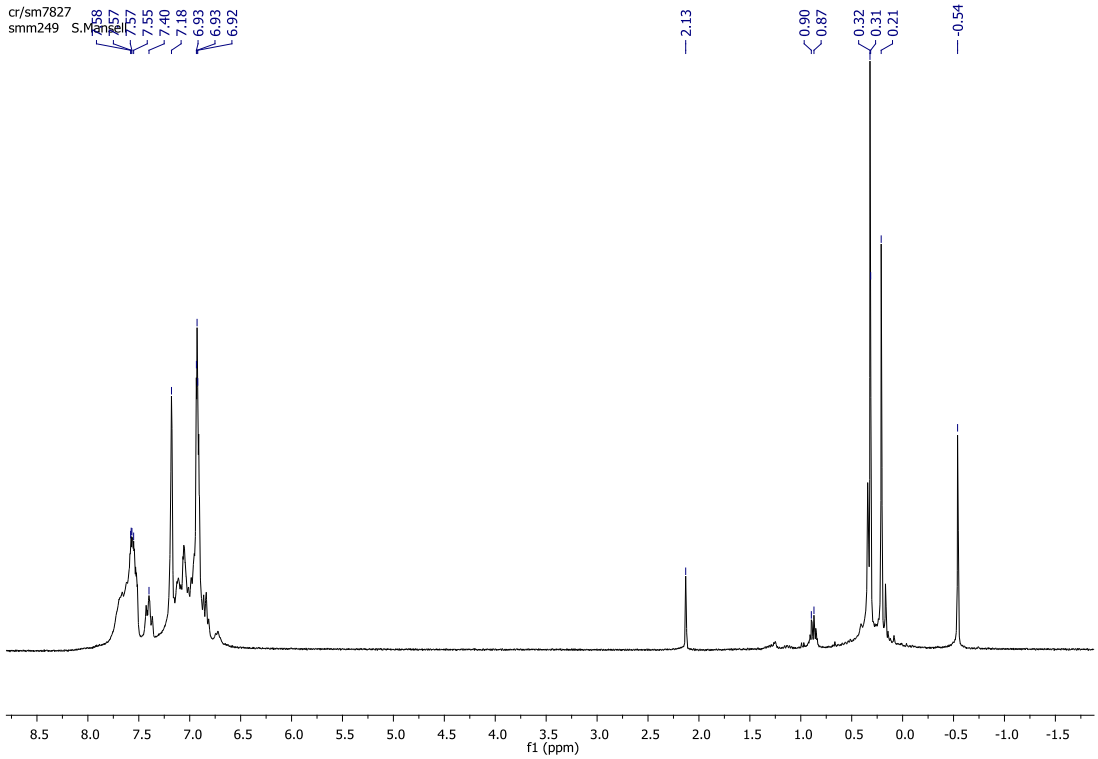


Figure S14. ^{1}H NMR spectrum of compound **7** before a substantial amount of by-products had been formed by thermal reaction.

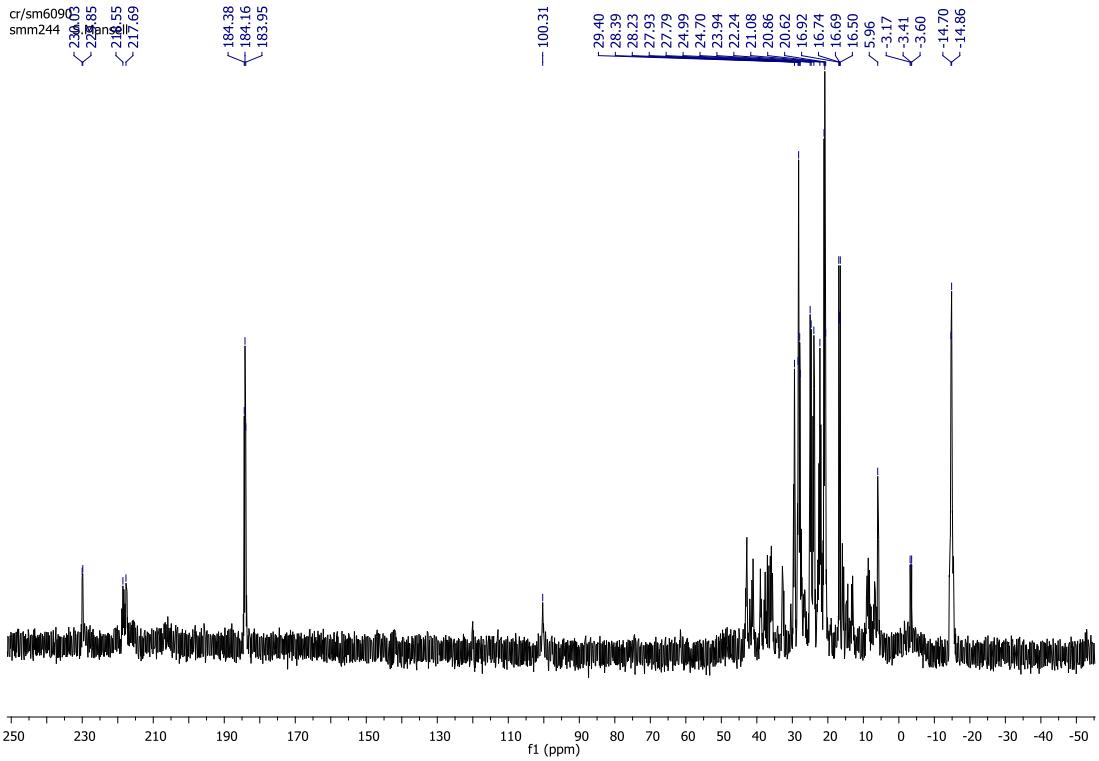
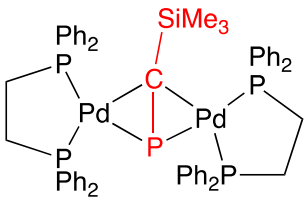


Figure S15. ^{31}P NMR spectrum of thermal reaction products of compound **7**.



8

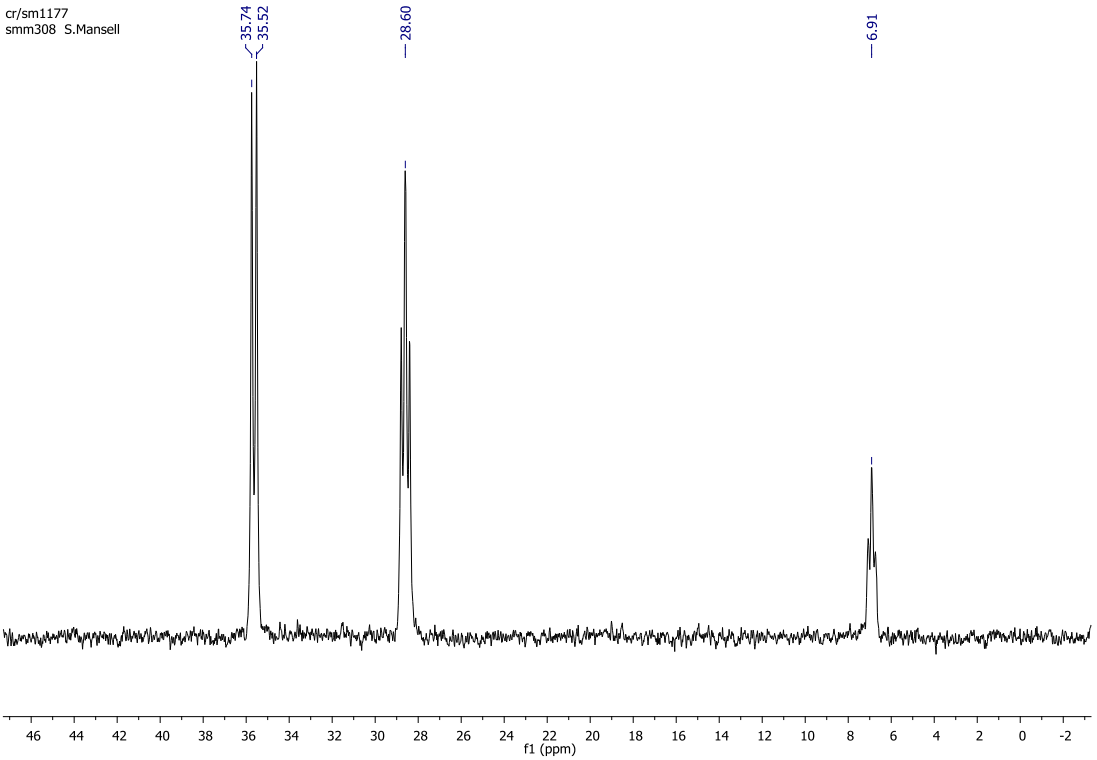


Figure S16. ^{31}P NMR spectrum of compound **8**.

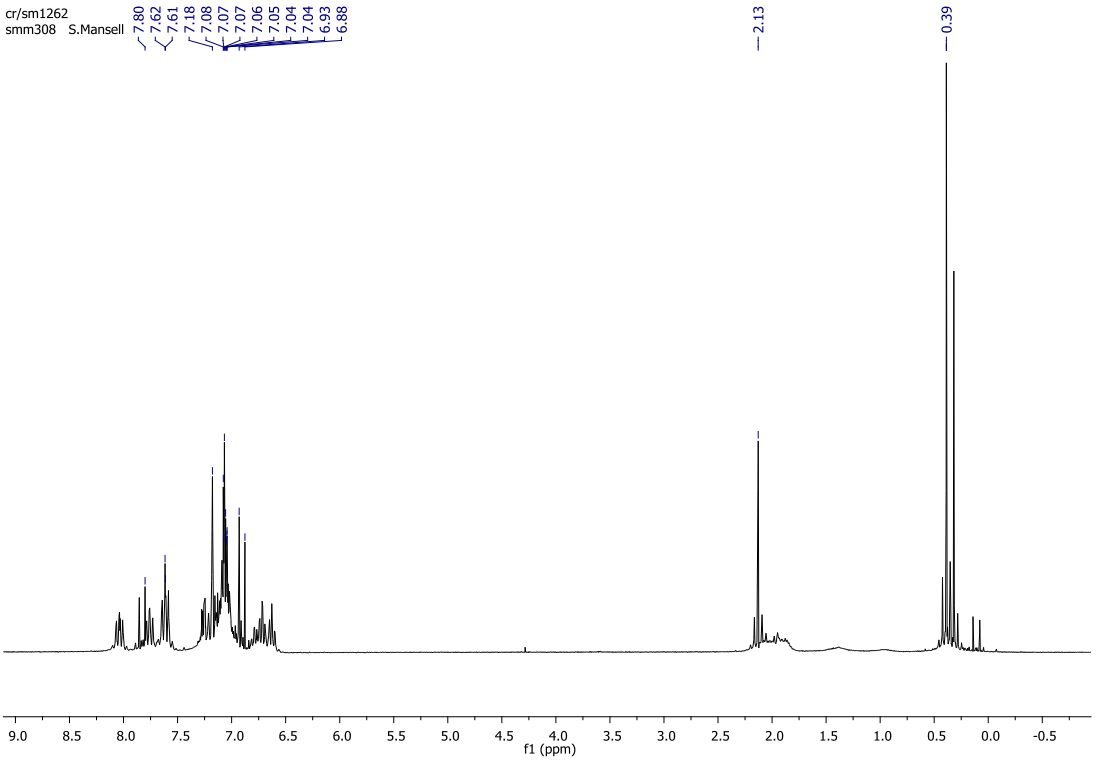
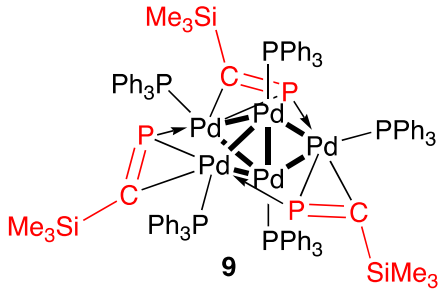


Figure S17. ^{1}H NMR spectrum of compound **8**. The resonance at 2.13 is from residual toluene.



9

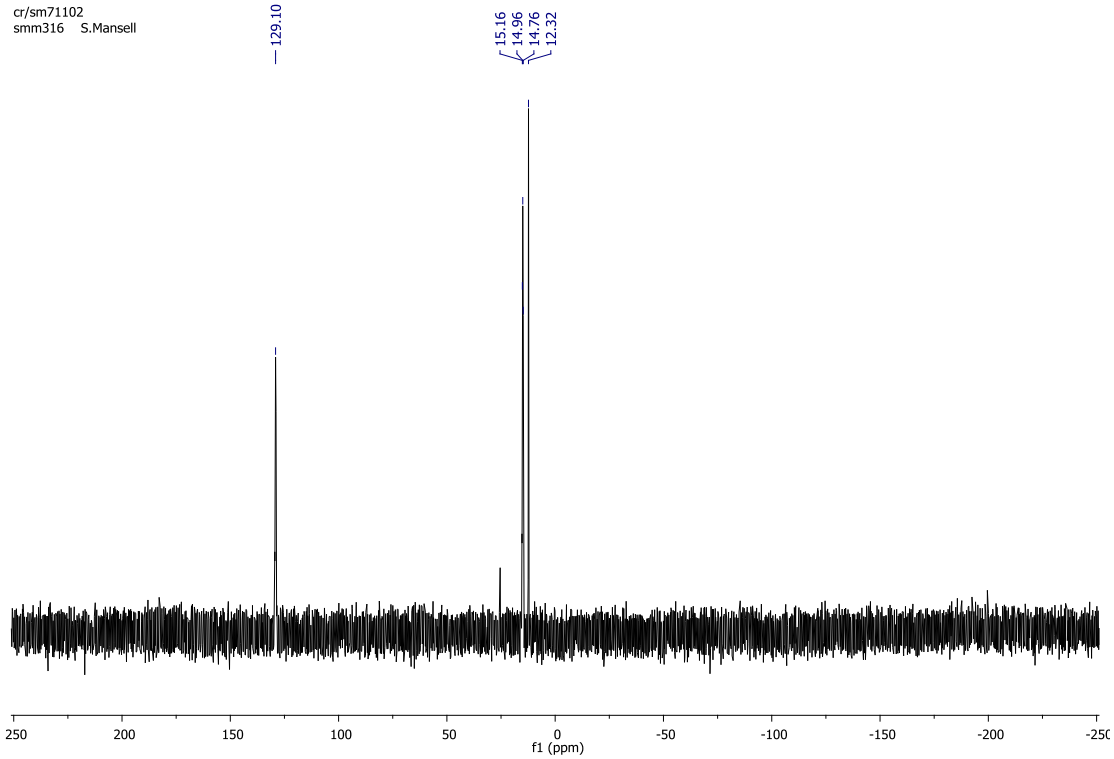


Figure S18. ^{31}P NMR spectrum of compound **9**.

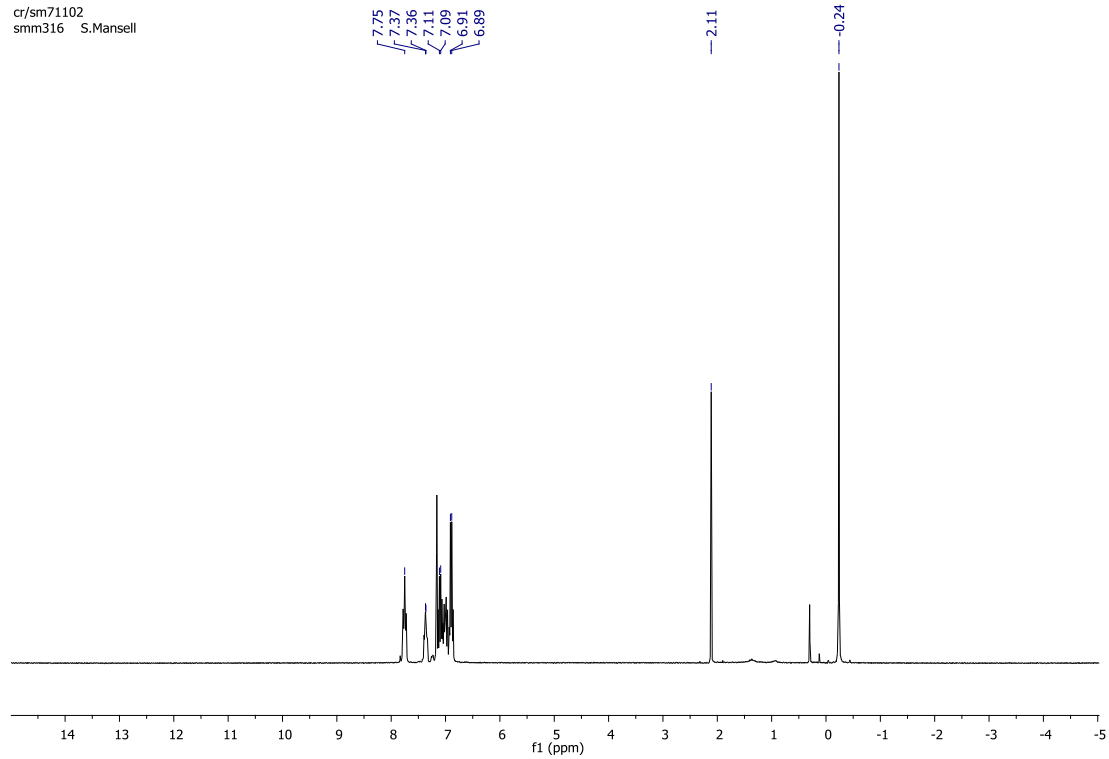


Figure S19. ^{1}H NMR spectrum of compound **9**. The resonance at 2.11 is from residual toluene.