New Insights into Addition Reactions of Dialkylzinc Reagents to Trifluoromethyl Ketones: Structural Authentication of a β-hydride Elimination Product Containing a Tetranuclear Zinc Chain.

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NMR spectra
Variable T 1H NMR spectra of [(TMEDA)Zn(Me){OC(CF₃)(Me)Ph}] (2) in deuterated toluene. (Black = -35°C; Red = 25°C; Blue = 80°C)
$^1$H NMR of isolated crystals of [($^t$Bu)$_2$Zn$_4$\{OC(CF$_3$)(H)Ph}\}] (5) in C$_6$D$_6$. 
$^{19}$F$^{1}$H NMR of isolated crystals of [(tBu)$_2$Zn$_4${OC(CF$_3$)(H)Ph}] (5) in C$_6$D$_6$.

* = traces of starting material, ketone 1

$^1$H NMR of quenched product (crude), alcohol PhC(H)(CF$_3$)OH (6) in C$_6$D$_6$.

1. This $^1$H NMR spectrum relates to a sample obtained by the treatment of isolated crystals of [(TMEDA)Zn(tBu){OC(H)Ph(CF$_3$)}](4) with a saturated aqueous solution of NH$_4$Cl, which explains the presence of small amounts of TMEDA as an impurity in this crude NMR spectrum.
$^{19}$F-$^1$H NMR of quenched product, alcohol PhC(H)(CF$_3$)OH (6) in C$_6$D$_6$. 

* = TMEDA impurity