

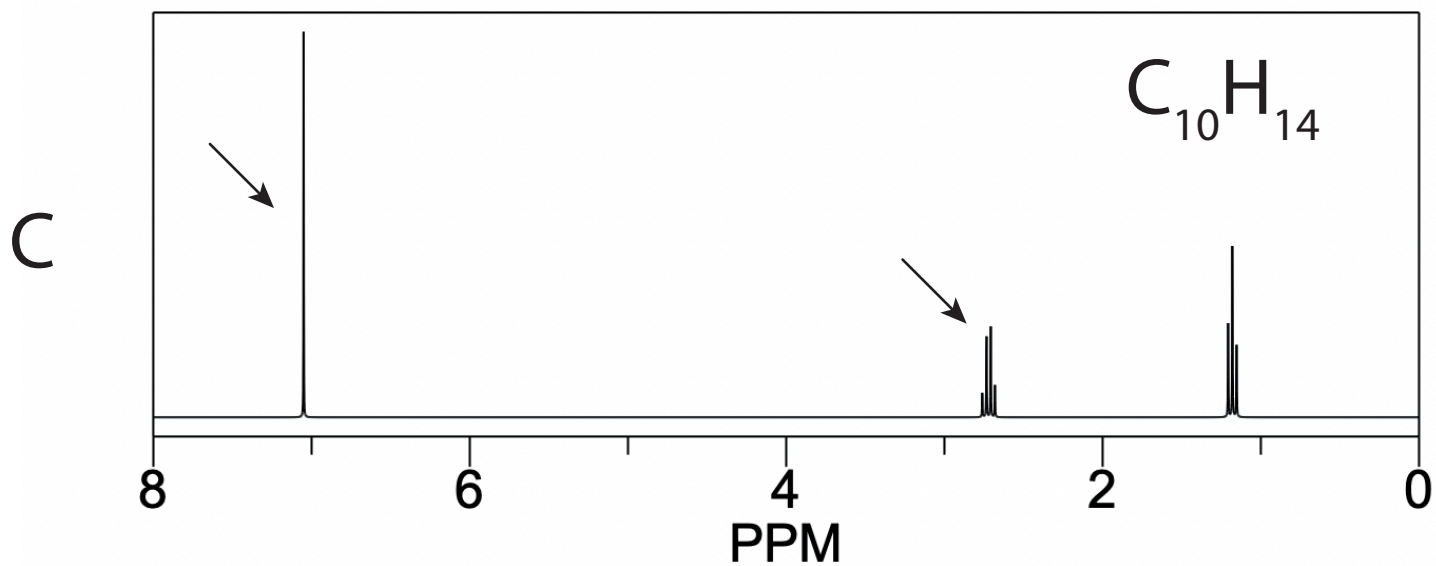
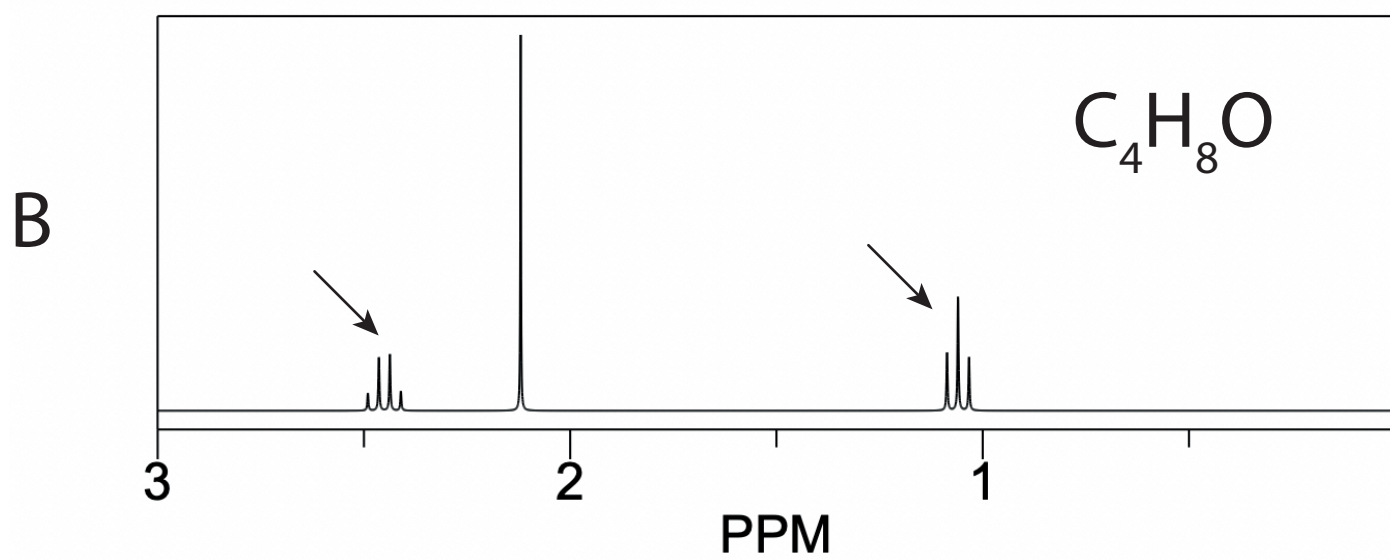
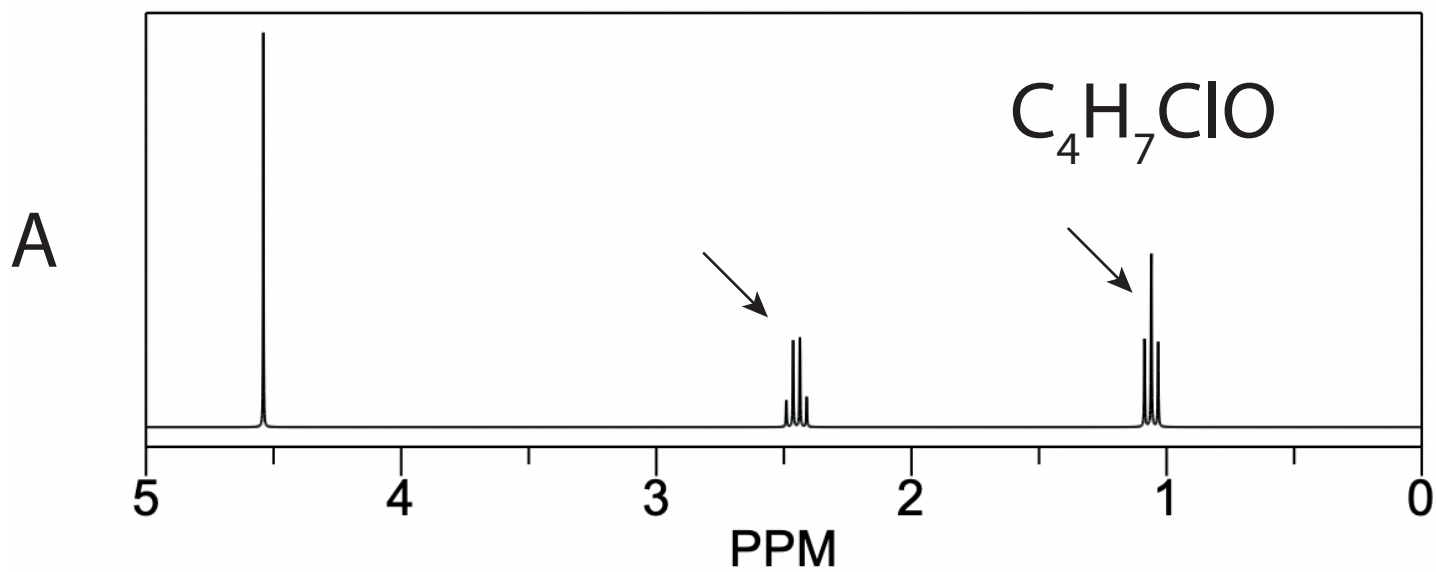
## Jigsaw 1: Synthesis

### Keeler Chapter 2. Setting the scene

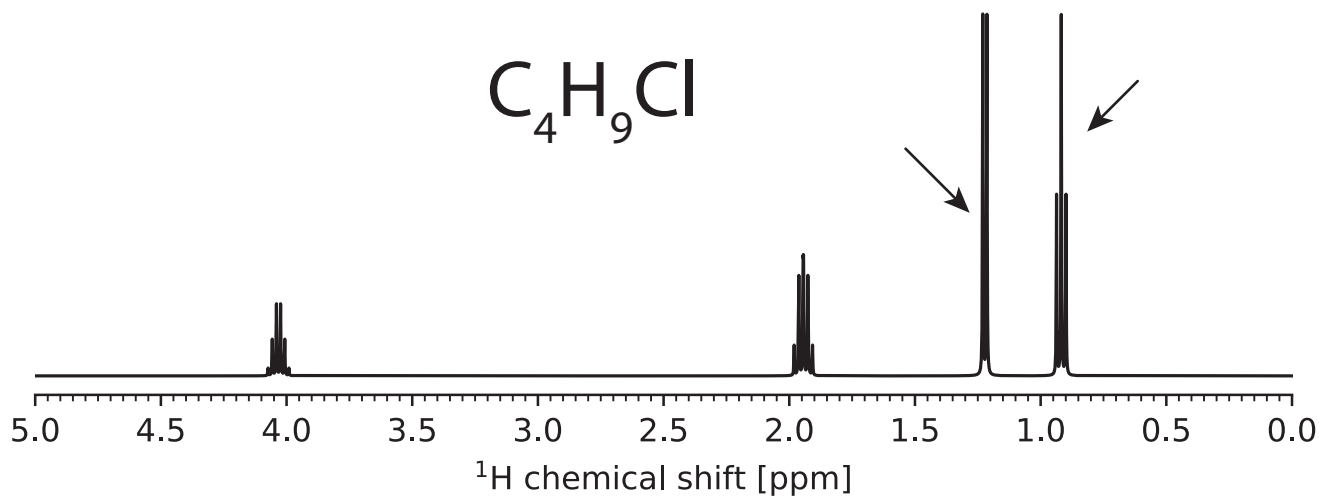
Consider the given  $^1\text{H}$  spectrum and chemical formula on the following page.

1. [Section 2.1] Estimate the separation in ppm for the two peaks indicated with arrows. Calculate this separation in Hz for a 400.130000 MHz and for a 900.130000 MHz spectrometer.
2. [Section 2.2] Determine the integral of each multiplet
3. [Section 2.3] Based on the multiplicity, your answer from (b), and the chemical formula, determine the molecule corresponding to this spectrum and indicate which protons correspond to which peaks.
4. [Section 2.4] How many peaks would the  $^{13}\text{C}$  spectrum have with and without proton decoupling?
5. [Section 2.5] Convert the peak separation from (a) to  $\text{rad s}^{-1}$ .

# Jigsaw 1. Synthesis



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