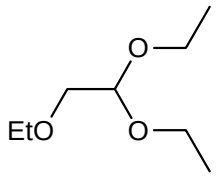
Problem R-09K: $C_8H_{18}O_3$

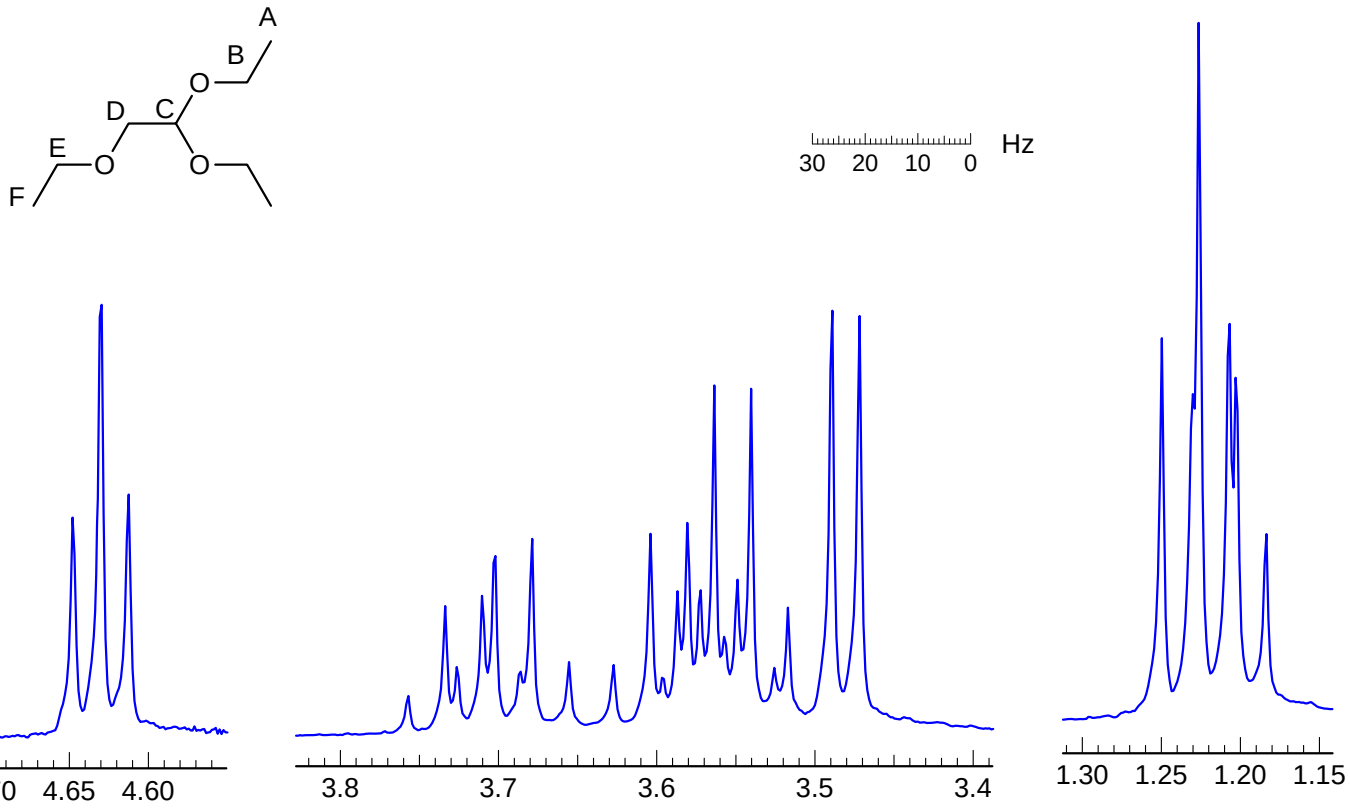
300 MHz ^{1}H NMR spectrum in $CDCl_3$

Source: Aldrich Spectra Collection/Reich g



PLT ex-2-2009-10-gq.plt

Problem R-09K $C_8H_{18}O_3$. This problem requires you to analyze the ^1H NMR spectrum of the diethylacetal of ethoxy acetaldehyde. The complete spectrum with integrations is on the next page.



(a) Give the chemical shift(s), multiplicity and couplings (δ 3.23, dt, J = 8, 2 Hz) of each unique proton in the spectrum. You may use first order analysis.

A _____

B _____

C _____

D _____

E _____

F _____

(b) To show you understand the pattern, put a marker (x) over each peak corresponding to proton **E**.

PLT ex-2-2009-10-gq.plt

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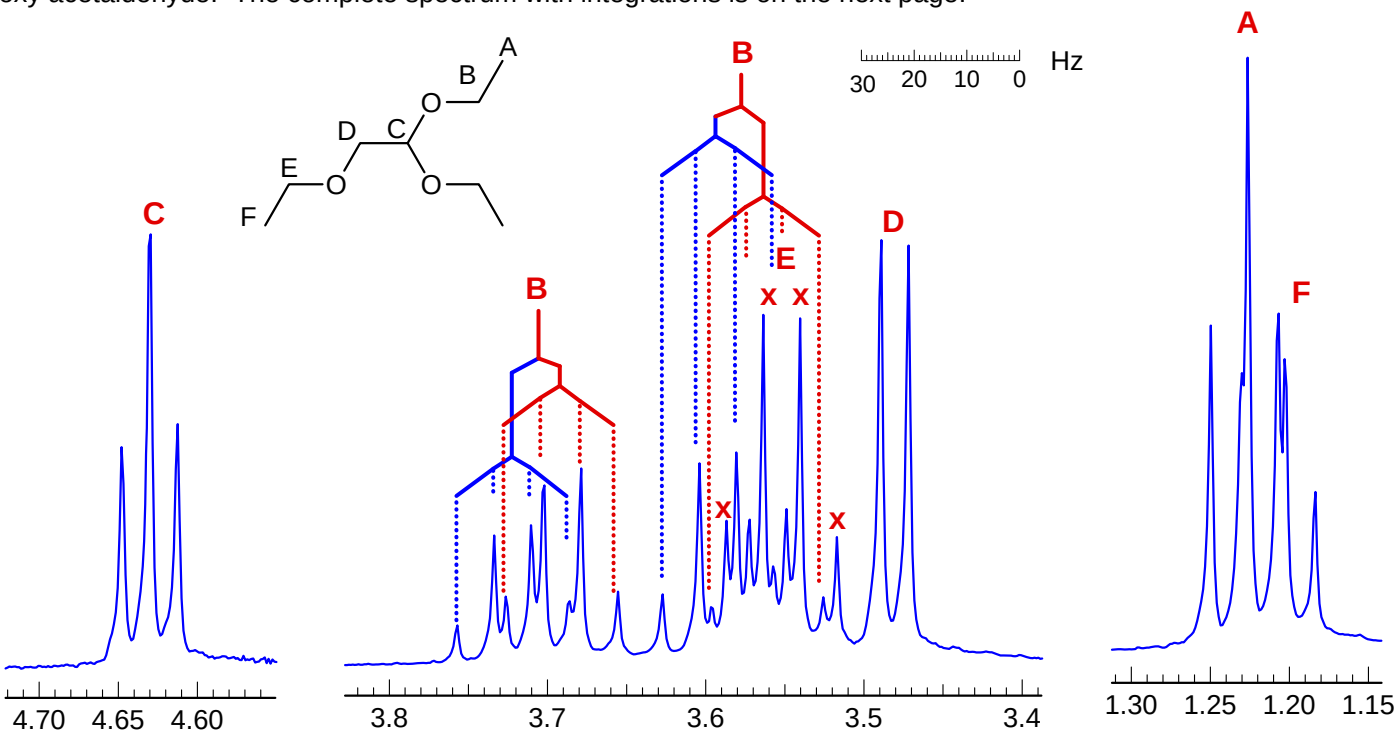
Problem R-09K $C_8H_{18}O_3$. This problem requires you to analyze the ^1H NMR spectrum of the diethyl acetal of ethoxy acetaldehyde. The complete spectrum with integrations is on the next page.



(a) Give the chemical shift(s), multiplicity and couplings (δ 3.23, dt, J = 8, 2 Hz) of each unique proton in the spectrum. You may use first order analysis.

2 A δ 1.23, t, J = 7 Hz

6 B δ 3.71, dq, J = 10, 7 Hz, δ 3.58, dq, J = 10, 7 Hz (B protons are diastereotopic) ABX_3

1 C δ 4.63, t, J = 5 Hz

1 D δ 3.48, d, J = 5 Hz

2 E δ 3.55, q, J = 7 Hz

2 F δ 1.20, t, J = 7 Hz

2 (b) To show you understand the pattern, put a marker (x) over each peak corresponding to proton **E**.