

## Answer on Question #65963 - Chemistry - Other

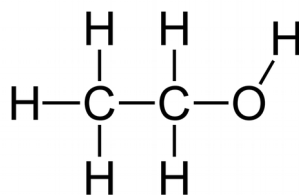
### Task:

Draw and explain the NMR spectrum of ethanol.

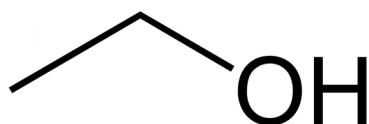
### Solution:

Chemical formula is  $C_2H_6O$ , which can be written also as  $C_2H_5OH$  or  $CH_3-CH_2-OH$

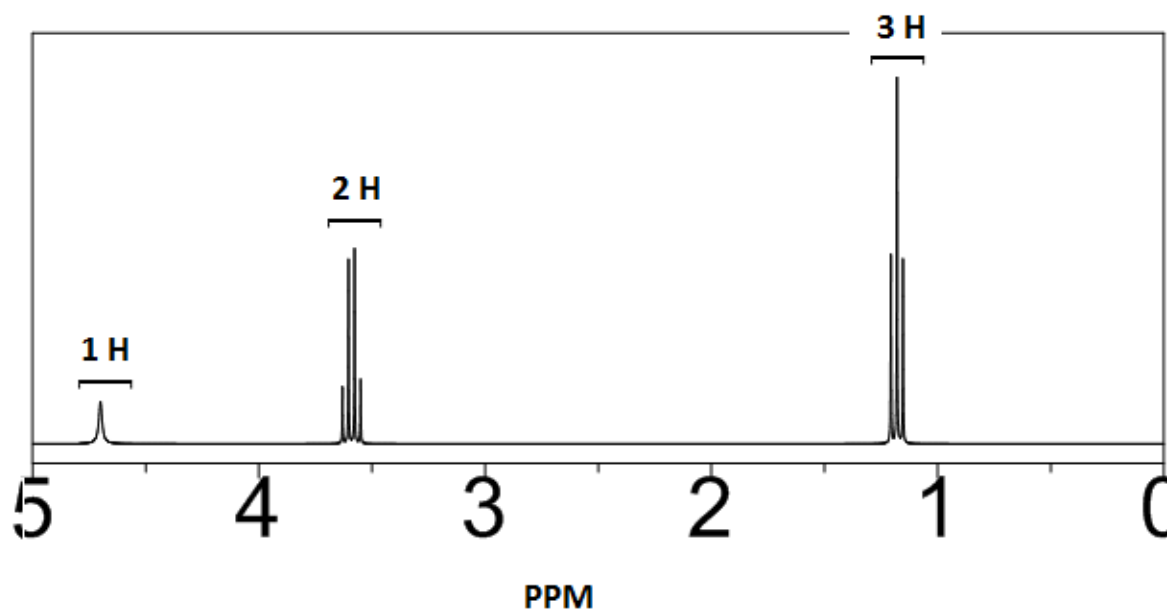
Full structural formula of ethanol:

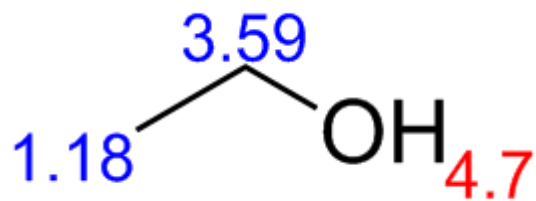


Skeletal formula of ethanol:



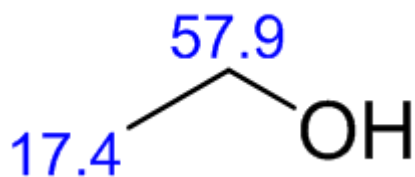
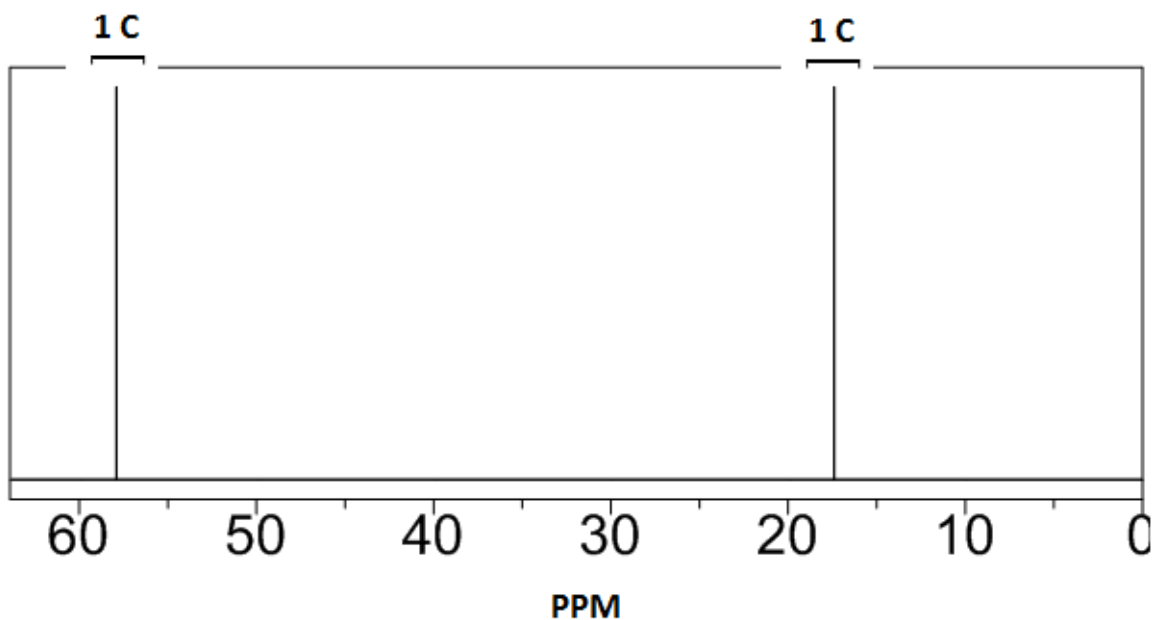
$^1\text{H}$  NMR spectrum of ethanol:





- d 1.18 is a triplet (methyl group,  $-\text{CH}_3$ );
- d 3.59 is a quartet (methylene group,  $-\text{CH}_2$ );
- d 4.70 is a singlet (hydroxy group,  $-\text{OH}$ ).

$^{13}\text{C}$  NMR spectrum of ethanol:



- d 17.4 is a methyl group,  $-\text{CH}_3$ ;
- d 57.9 is a methylene group,  $-\text{CH}_2$ .