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Hirbod Karimi Islamic Azad University, Shahreza

Why are there two C-H spectra for the aldehyde proton in IR?

Question

Asked November 12, 2014

A very important doublet can be observed in the C-H stretch region for the aldehyde C-H near 2850 and 2750 cm-1. The presence of this doublet allows aldehydes to be distinguished from other carbonyl-containing compounds.

Is this because of overtones or Fermi resonance?

Answer this question

Infrared Spectroscopy Applied Organic Chemistry IR Spectra

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Popular Answers (1)



Alcides Simão added an answer

November 13, 2014

This doublet is the result of a Fermi resonance, arising from the C-H stretch vibration, It is also a very well documented phenomena.

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All Answers (6)



Alexander Shchegolikhin added an answer

November 12, 2014

Dear Sir, could you kindly provide the community with an image of the spectrum under question? Some extra info about the nature of the sample would be of help too. Thank you.

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Alcides Simão added an answer	November 13, 2014
This doublet is the result of a Fermi resonance, arising from the It is also a very well documented phenomena.	e C-H stretch vibration,
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Adel Amer added an answer	November 19, 2014
Karimi,	
I agree with Simao, however to get more information please rea	ad
http://www.umsl.edu/~orglab/documents/IR/IR2.html	<u>Read more</u>
Recommend Share V	
Bojidarka B. Ivanova added an answer	May 27, 2015
Mr. Karimi,	
The 2840+/-30 cm ⁻¹ is n(O=)CH, while 2720+/-20 cm ⁻¹ is over find as an attachment the IR-spectrum of PhCHO with he corre of the IR-bands of aldehydes, the ranges, and reference	esponding assignement
	<u>Read more</u>
Recommend Share Bojidarka B. Ivanova added an answer	2 Recommendations May 28, 2015
The attachment to the posting above	

https://www.researchgate.net/post/Why-are-there-two-C-H-spectra-for-the-aldehyde-proton-in-IR

2CH-aldehyde-gif.jpg · 227.39 KB

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1 Recommendation

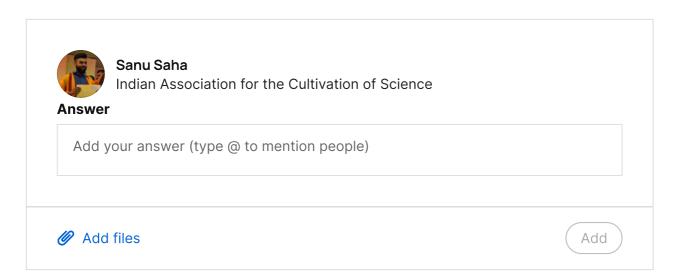


Duaa Alotaibi added an answer

November 10, 2018

The aldehyde C-H stretch appears at lower frequencies than the saturated C-H absorptions and normally consists of two weak absorptions at about 2850 and 2750 cm-1. The 2850-cm-1 band usually appears as a shoulder on the saturated C-H absorption bands. The band at 2750 cm-1 is rather weak and may be missed in an examination of the spectrum. The doublet that is observed in th Read more

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