

Hoja de trabajo No.04 (02 febrero)
Espectros IR

Instrucciones: Realizar en parejas y entregar el día miércoles 08 de marzo, durante el periodo de clase.

Proponga una estructura y nombre probable para los siguientes compuestos, además de las bandas características, el tipo de estiramiento, enlace al que corresponde y valores que utilizó para llegar a la estructura propuesta.

Los problemas corresponden al libro:

Ralph L. Shriner, Christine K. F. Hermann, Terence C. Morrill, David Y. Curtin, Reynold C. Fuson, "The Systematic Identification of Organic Compounds", 8ta Edi. 2004, Willey, Capitulo No.07

For each of the following problems, calculate the unsaturation number and give the interpretation. List the labeled wavenumbers in tabular form and identify the bond and compound type. Give the name and the structure.

- 1. Unknown compound of formula C_4H_9NO (Figure 7.34). Identify wavenumbers 1390, 1649, 1660, 2985, 3201, and 3354 cm^{-1} .**
- 2. Unknown compound of formula $C_4H_{10}O$ (Figure 7.35). Identify wavenumbers 1102, 1326, 1373, 1455, 2872, 2919, 2955, and 3342 cm^{-1} .**
- 3. Unknown compound of formula C_7H_7Br (Figure 7.36). Identify wavenumbers 591, 797, 1484, 1596, 2919, and 3013 cm^{-1} .**
- 4. Unknown compound of formula C_4H_8O (Figure 7.37). Identify wavenumbers 1173, 1375, 1455, 1713, and 2978 cm^{-1} .**

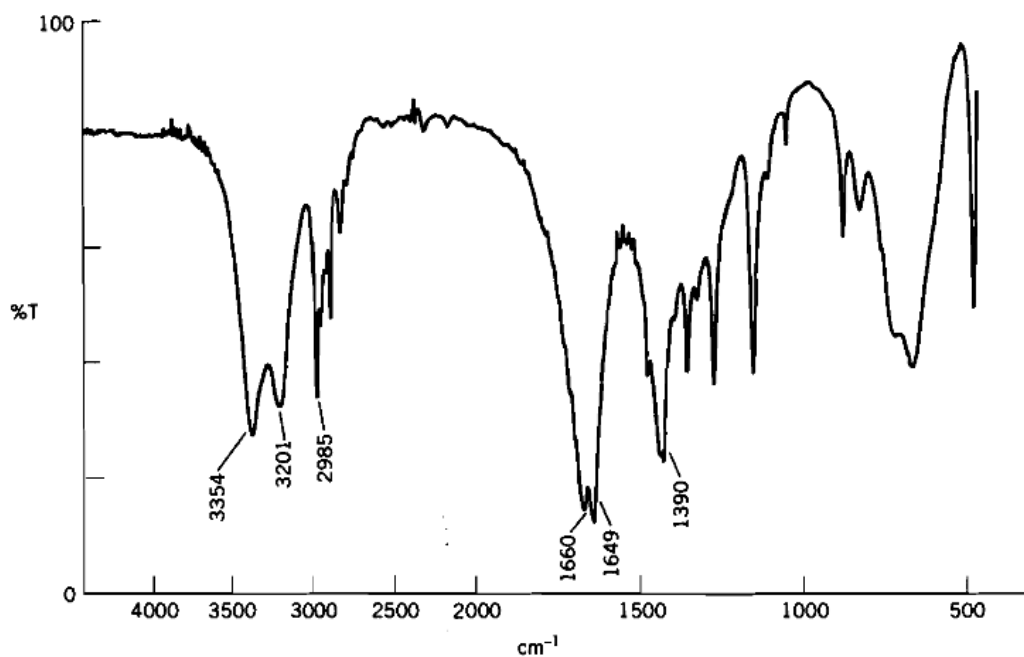


Figure 7.34 Problem 1 IR spectrum of unknown compound of formula C_4H_9NO . [Spectrum courtesy of Terra Hosp, Department of Chemistry and Physics, Radford University, Radford, Virginia. Used with permission.]

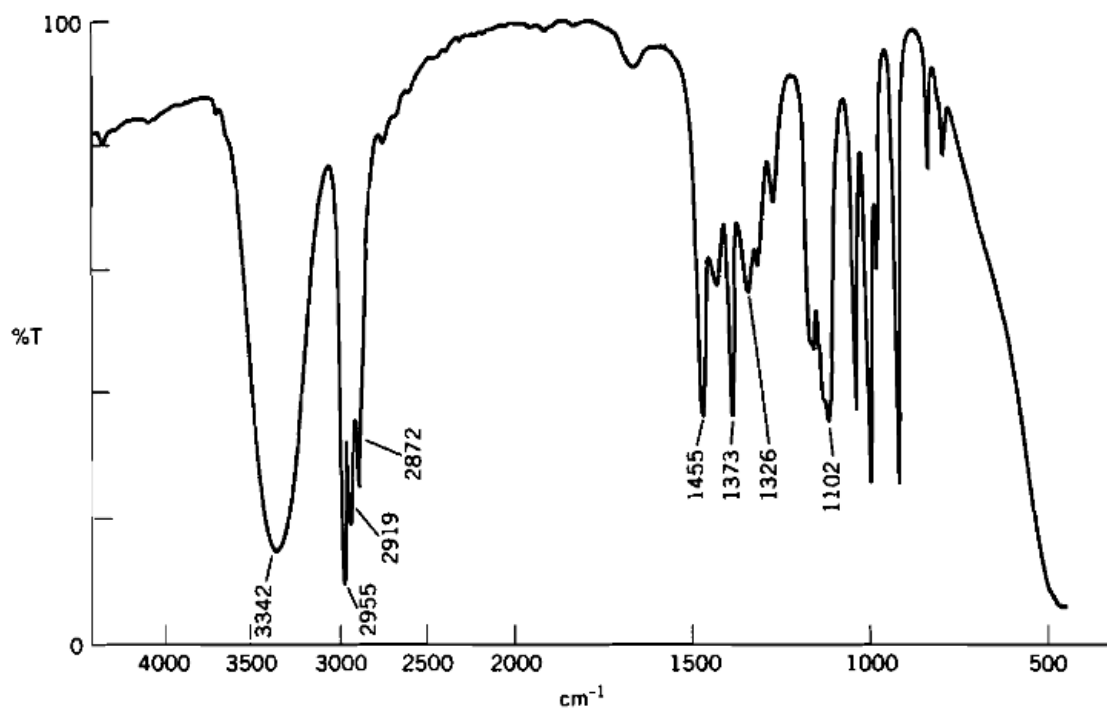


Figure 7.35 Problem 2 IR spectrum of unknown compound of formula $C_4H_{10}O$. [Spectrum courtesy of Christine K. F. Hermann, Department of Chemistry and Physics, Radford University, Radford, Virginia. Used with permission.]

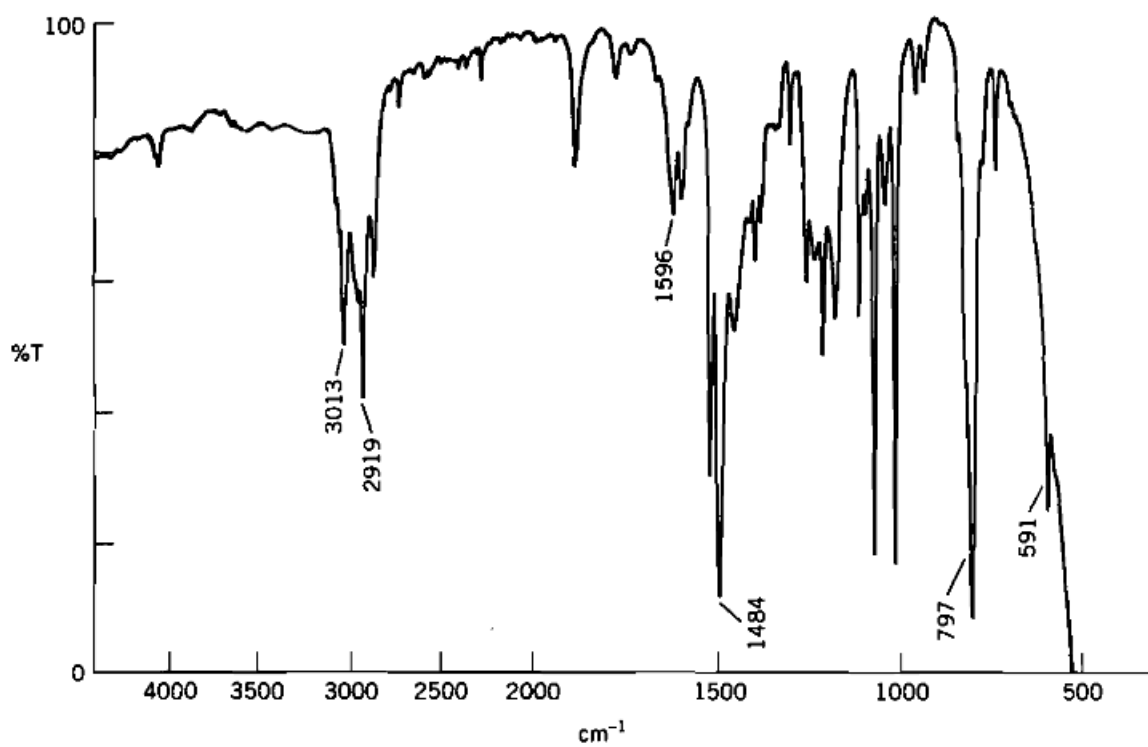


Figure 7.36 Problem 3 IR spectrum of unknown compound of formula C_7H_7Br . [Spectrum courtesy of Terra Hosp, Department of Chemistry and Physics, Radford University, Radford, Virginia. Used with permission.]

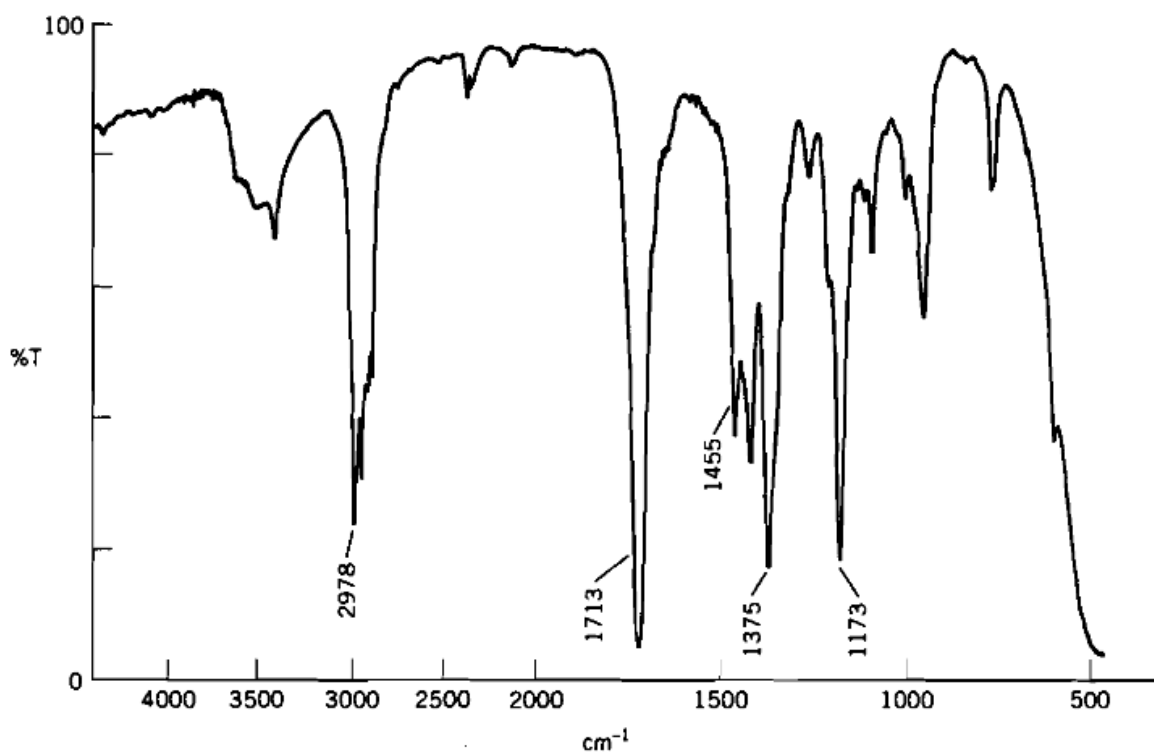


Figure 7.37 Problem 4 IR spectrum of unknown compound of formula C_4H_8O . [Spectrum courtesy of Terra Hosp, Department of Chemistry and Physics, Radford University, Radford, Virginia. Used with permission.]