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ch216sp12syllabus: Experiment 5

Experiment 5: Identification of a Spectroscopic Unknown

Introduction: Nuclear magnetic resonance (NMR) spectroscopy and Infrared (IR) spectroscopy can often be used in combination to elucidate the structure of unknown compound. Both methods are routinely employed in chemistry research because they are rapid, require only a small quantity of material and are nondestructive. IR spectroscopy provides information leading to the identification of functional groups in a compound, whereas NMR spectroscopy can be used to obtain more specific information regarding the connectivity and structural arrangement of atoms.

Procedure: You will be given 1 g of an unknown compound. Determine the structure of your unknown compound through the use of IR and ^1H NMR spectroscopy. If your unknown is a solid, determine its melting point. Use the Reaxsys database and/or SDBS to obtain information on the chemical and spectroscopic properties of the compound corresponding to your proposed structure and compare them with your unknown compound.

Possible Unknown Compounds:



