Electronic cigarettes (e-cigarettes) are growing in popularity. Concerns have been raised about the ingredients employed in the cartridges specifically the flavorings used. The e-liquids used in electronic cigarettes consist of propylene glycol, glycerin, nicotine, and chemical additives for flavoring. Our research has focused on developing a gas chromatography mass spectrometry (GCMS) method to analyze electronic cigarette solutions to determine their chemical components and to determine the concentration of nicotine in the pods.