

# Analysis of Diet Soft Drinks for Aspartame, Caffeine and Citric/Benzoic Acids by HPLC

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## Introduction

Today, diet soft drinks are very popular worldwide as they are a better alternative than high-calorie regular soft drinks. The artificial sweetener used in these soft drinks is aspartame. Other than aspartame, caffeine, citric acid and benzoic acid are the other ingredients. This method shows qualitative as well as quantitative determination of all the ingredients using a simple isocratic method.

## Experimental

The analysis was carried out using a PerkinElmer® Series 200 HPLC System, including binary pump, autosampler and UV-VIS detector. The column used was the Brownlee™ Validated C-18 column, 150 X 4.6 mm, 5 µm. The mobile phase conditions were 30:70 methanol/buffer (0.01M KH<sub>2</sub>PO<sub>4</sub> + 0.1% TEA pH=2.55), with a flow rate of 1.0 mL/min, run at ambient temperature. The UV/Vis detector was set to 210 nm and the injection volume was 10 µL. Both the sample and 200-ppm standard were first diluted 1:1 with mobile phase before injection.

## Results

Figure 1, below, shows the overlay of the 100-ppm standard, 200-ppm standard and diet soft drink. The amount of aspartame and caffeine was found to be 170 ppm and 130 ppm, respectively. The resolution was more than 3 for all peaks.

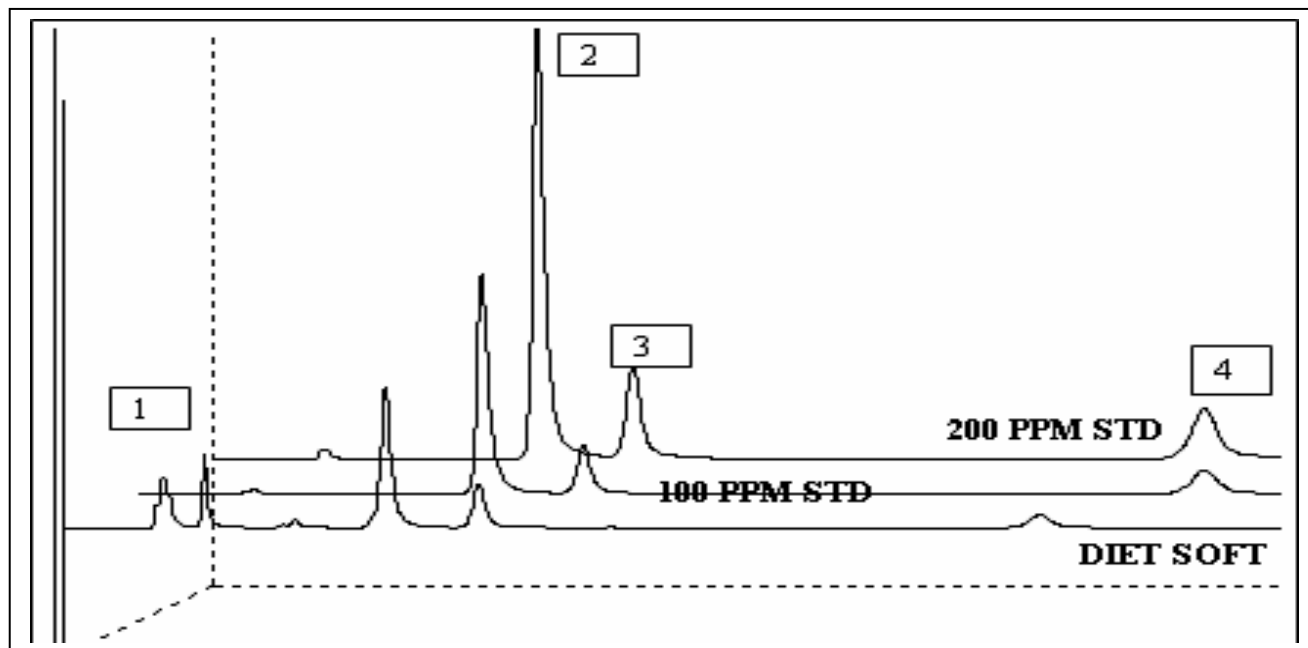


Figure 1. Components: 1 - Citric Acid; 2 - Caffeine; 3 - Aspartame; 4 - Benzoic Acid.

## Conclusion

This method describes a simple isocratic method for the analysis of citric acid, caffeine, aspartame and benzoic acid in diet soft drinks.

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