

Soft Drink Analysis Kit

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I. INTRODUCTION

This instruction sheet describes the Waters® Soft Drink Analysis Kit and how to use it. The Waters Soft Drink Analysis Kit is made up of two parts:

1. Mobile phase—Four 1-liter bottles containing a pre-mixed solution of denatured ethanol, buffer, and water. Circulate one liter of mobile phase through the system for one week, then replace with one liter of fresh mobile phase.
2. Standards—Four 100 mg vials of aspartame powder, and a 1-liter bottles of CBS standard containing a solution of denatured ethanol and water (15/85 v/v) with:
 - Caffeine 100 mg/L
 - Benzoic acid 200 mg/L
 - Sorbic acid 100 mg/L

WARNING: Denatured ethanol is toxic. Do not ingest.



Figure 1. Soft Drink Analysis Kit.

II. USING THE WATERS SOFT DRINK ANALYSIS KIT

a. Preparing the standards solution

Prepare the standards solution by mixing CBS standard and aspartame. Prepare fresh standards solution weekly.

1. Select a flask suitable for preparing 200 mL of solution. Weigh to ± 0.1 g. Leave the flask on the scale.
2. Record the empty weight of the flask. Add 194.8 to that number, and record the result.
3. Empty one vial of aspartame into the flask. Rinse the empty vial with CBS standard, and empty the vial into the flask. Repeat twice.
4. Add CBS standard to the flask until the combined weight of the flask and the solution reaches the value calculated in step 2. (The combined weight of the CBS standard and aspartame is 194.8 g).
5. Mix well. Vacuum filter the solution through a 0.45 μm filter into a labeled storage container and refrigerate. The standards solution prepared by this method contains:

- Caffeine 100 mg/L
- Aspartame 500 mg/L
- Benzoate 200 mg/L
- Sorbate 100 mg/L

Please note that each lot of WAT036889 standards will have its own verified concentration of caffeine, benzoate and sorbate. The values on the product label indicate the actual concentration of caffeine, benzoate & sorbate for that specific lot.

These values should be used as the component amounts when entering values for each analyte for the standard curve. The Aspartame concentration is 500 mg/L for all lots if prepared as directed.

b. Replacing Mobile Phase

Circulate one liter of mobile phase for one week. To replace mobile phase, purge the old mobile phase from the system and replace it with fresh mobile phase. To prime and start the pump, refer to the pump operators manual.

1. Set the pump flow rate to 0.0 mL/min
2. Remove the waste line from the solvent reservoir. Place the line into a waste container.

3. Put the solvent line into the new bottle of mobile phase.
4. Set the pump flow to 1.0 mL/min and wait 15 minutes.
5. Monitor the detector for stability. When stable, return the waste line to the solvent reservoir to recirculate. Monitor the detector for stability. When stable inject a standard to recalibrate the instrument.
6. Use the same mobile phase for one week. Replace the mobile phase weekly.

c. Instrument Settings

Figure 2 is a chromatogram of a standards solution. The table below shows the settings used to obtain the chromatogram.

Soft Drink Analysis with Breeze

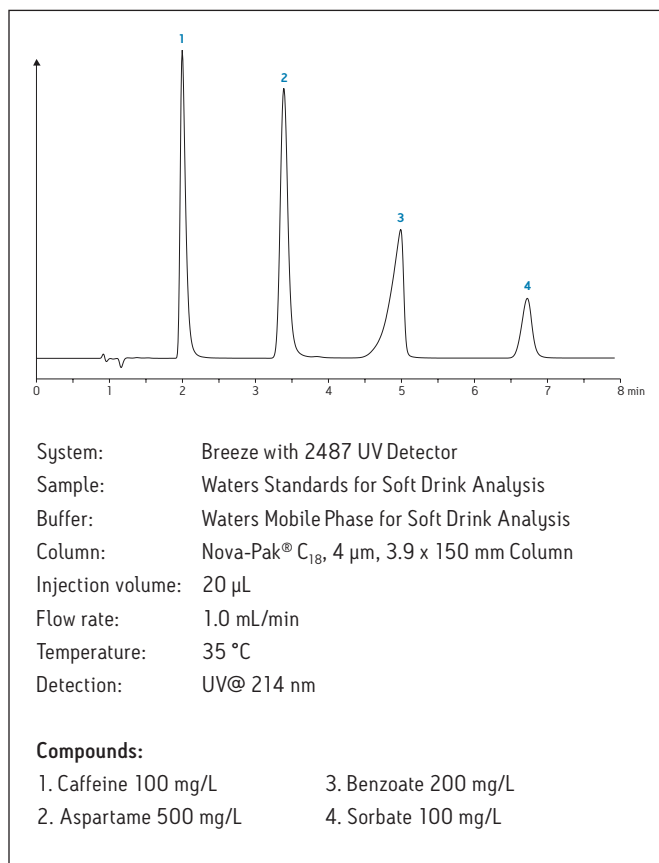


Figure 2: Chromatogram of a standards solution

III. STORAGE

Store mobile phase at room temperature indefinitely. Refrigerate standards solution. Make fresh standards solution weekly.

IV. ORDERING INFORMATION

Description	Part Number
Waters Mobile Phase for Soft Drink Analysis	WAT036888
Waters Standards Kit for Soft Drink Analysis	WAT036889
Nova-Pak C ₁₈ , 4 µm, 3.9 x 150 mm column	WAT086344
Nova-Pak C ₁₈ , 4 µm, 3.9 x 20 mm Sentry™ Guard Column	WAT044380
Sentry Universal Guard Holder	WAT046910
Pall Gelman Laboratory Filter, PVDF, 13 mm, 0.45 µm (for samples ≥ 2 mL)	WAT200512
Pall Gelman Laboratory Filter, Nylon, 4 mm, 0.45 µm (for samples < 2 mL)	WAT200526

Waters

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