

Quantitative Analysis of Phosphoric Acid in Soft Drinks on Amaze HA Column

Equipment

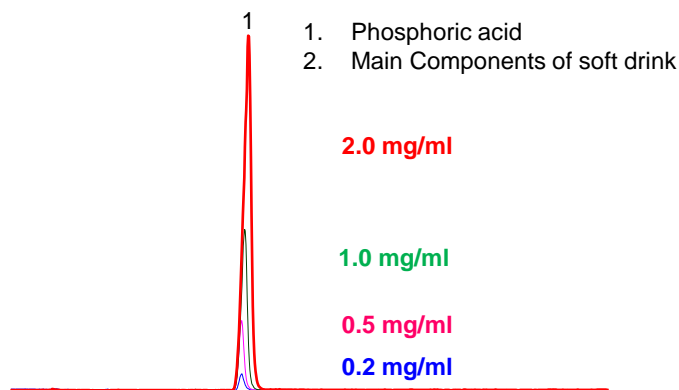
Agilent 1100 HPLC system with Sedere 75 ELSD
 Analytical Balance
 HPLC Column: Amaze HA, 3.0x100 mm, 3 um, 100A

Materials:

Soft drinks (Coke and Pepsi products)
 ACN (Tedia, catalog #AS1127)
 Distilled water (Aldrich, catalog #270733)
 Ammonium acetate (Aldrich, catalog #7262)
 Acetic acid (Aldrich, catalog #6283)
 Phosphoric acid (Aldrich, catalog #345245)

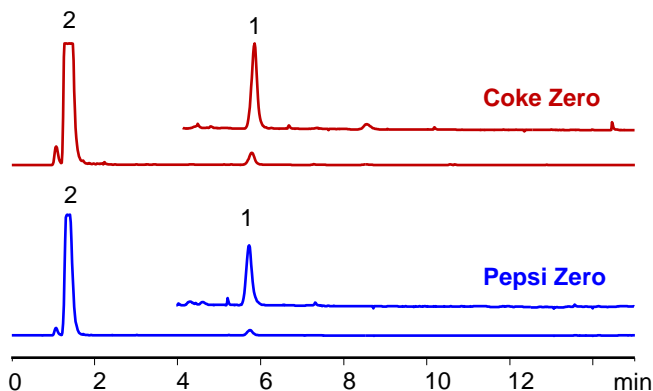
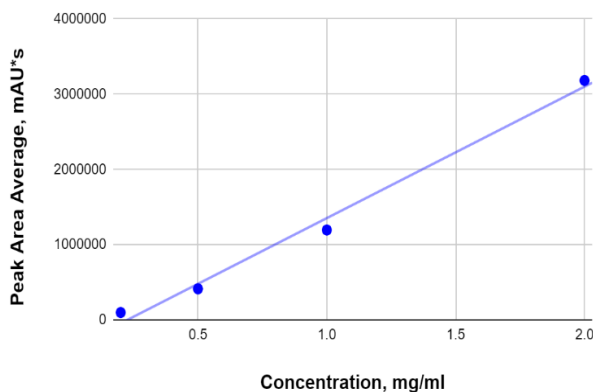
Method Description

HPLC Pump set up: **A:** DI water, **B:** Acetonitrile, **C:** 100 mM Ammonium acetate pH 4
 Mobile phase: 60% ACN with 10 mM ammonium acetate pH 4.0 buffer
 Mobile phase delivery: **A:** 30%, **B:** 60%, **C:** 10%



Phosphoric Acid Calibration and Sample Analysis

Calibration Plot for Phosphoric Acid, mg/ml (RSD 0.99)



Column: Amaze HA
Dimensions: 3.0 x 100 mm, 3 um, 100A
Mobile phase: 60% ACN with 10 mM AmAc pH 4
Flow: 0.5 ml/min
Detection: ELSD. 40°C
Sample: Standards and soft drinks

Concentration, mg/ml	Peak Area Average, mAU*s	Peak Area, Inj. 1, mAU*s	Peak Area, Inj. 2, mAU*s	Peak Area, Inj. 3, mAU*s	Concentration of Phosphoric Acid, mg/ml
0.2	97530	97770	98943	95876	-
0.5	412588	412190	413682	411892	-
1	1194435	1189859	1198924	1194521	-
2	3182351	3172520	3186903	3187630	-
Pepsi Zero	424361	424239	424658	424187	0.47
Pepsi Black Cherry	431486	431375	431657	431425	0.47
Pepsi Diet Wild Cherry	634614	634305	634856	634682	0.59
Coca Cola Zero	675667	680207	670911	675882	0.61
Coca Cola Diet	323945	323873	324104	323857	0.41
Coca Cola	633553	633878	632119	634663	0.59