Flavors and aromas
Analysis of influence of storage conditions on carbonated water

Application Note

Food Testing & Agriculture

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Introduction
Gas chromatography with an Agilent CP-Sil 8 CB column investigates the storage conditions of carbonated water, identifying 15 components in 30 minutes.
Conditions

Technique: GC-TCT (Off-Line purging on Tenax TCT tube)

Column: Agilent CP-Sil 8 CB, 0.25 mm x 25 m fused silica
        WCOT Cp-Sil 8 CB (df = 0.4 μm) (Part no. CP7769)

Temperature: 35 °C (2 min) → 110 °C, 5 °C/min;
              110 °C → 240 °C, 10 °C/min; 240 °C (10 min)

Carrier Gas: He

Injector: TCT
          Cold trap: CP-Sil 8 CB
          Purge temp.: 85 °C
          Purge time: 30 min
          Purge flow: 16 mL/min
          Cryofocussing: -120 °C
          Precice time: 3 min
          Desorb time: 10 min
          Desorb flow: 10 mL/min
          Desorption oven temp.: 300 °C
          Injection temp.: 200 °C
          Injection time: 1 min
          GC-injection block temp.: 250 °C

Detector: MS

Concentration Range: ppt/ppb

Sample: carbonated water stored outdoor and indoor
        in glass bottles during 18 days; 100 ng I.S.

Courtesy: Prof. U. M. Pagnoni, University of Modena, Italy

Peak identification

1. benzene
2. tiglic aldehyde
3. valeraldehyde
4. toluene
5. hexanal
6. bleeding products
7. I.S.
8. C_8 aromatic hydrocarbons
9. C_9 aromatic hydrocarbons
10. C_10 aromatic hydrocarbons
11. heptanal
12. C_9 aromatic hydrocarbons
13. octanal
14. undecane
15. nonanal