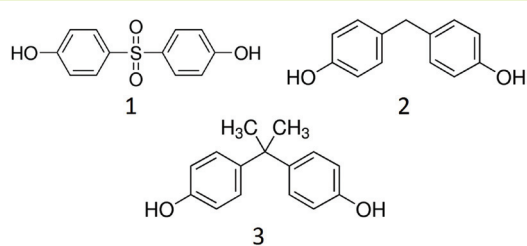
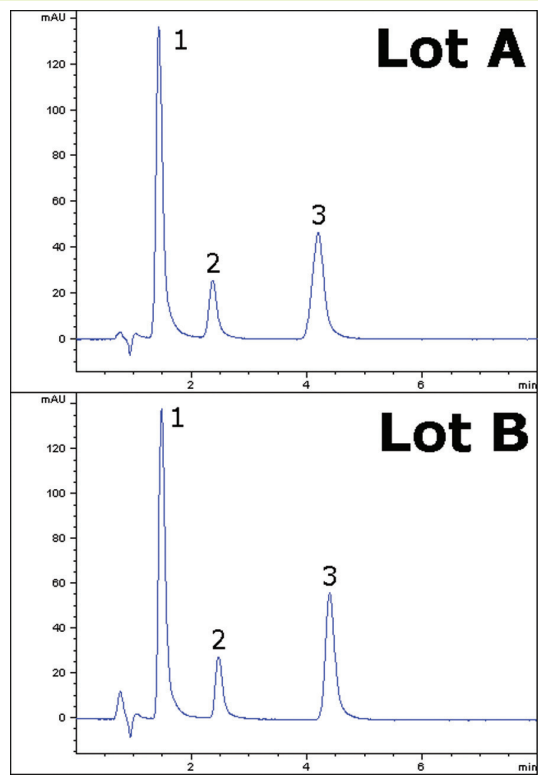


Bisphenol A, S, and F

Separation of epoxy resins



Note: BPA is a synthetic compound widely used in industry as an epoxy resin, a polycarbonate, and an antioxidant in polyvinyl chloride (PVC) plastics. Epoxy resins are used as inner surface coatings for food and beverage cans. Polycarbonates are used in fabrication of plastic food containers (even infant feeding bottles). PVC is in a variety of products which come in contact with food. Even at low concentrations, chronic exposure to BPA is of toxicological concern. It has estrogen-like effects and causes a variety of adverse symptoms (e.g. genital malformations, testicular abnormalities, impairment in fertility or sexual functions).

Method Conditions

Column: Cogent Bidentate C18 2.0™, 2.2µm, 120Å

Catalog No.: 40218-05P-2

Dimensions: 2.1 x 50 mm

Mobile Phase: 65% DI H₂O / 35% acetonitrile / 0.1% formic acid (v/v)

Injection vol.: 2.0 microL

Flow rate: 0.2mL/min

Detection: UV 275 nm

Samples: 1000 mg/L stock solutions of each analyte were prepared in a methanol diluent. Then 100 mg/L dilutions of each solution were prepared as well as a mixture of all three analytes.

Peaks: 1. Bisphenol S
2. Bisphenol F
3. Bisphenol A

Discussion

In this application note, a separation is demonstrated for three types of bisphenol compounds. Many consumer products are using BPA alternatives in recent years due to health concerns regarding BPA. An analytical HPLC method will need to be able to distinguish amongst these various bisphenol compounds. Here, excellent resolution was obtained for all three analytes using the Cogent Bidentate C18 2.0 column. Results from two column lots are shown, demonstrating good batch consistency. The method could be applied to analyses of BPA or BPA-free consumer products, the latter of which may still contain other harmful bisphenol compounds such as BPF or BPS.