IMPROVING THE HPLC ANALYSIS OF FOOD AND BEVERAGE PRODUCTS WITH NEW STATIONARY PHASES

The complexity of food and beverage samples means that a wide range of stationary phase chemistries is needed for their separation by LC-MS. One alternative type of stationary phase that food analysts should consider is based on silica-hydride. These stationary phases are particularly useful for very polar compounds.

FOOD AND BEVERAGE ANALYSIS

There are increasing demands for more extensive and accurate analyses of food and beverage products

ANALYSIS MAKES IT POSSIBLE TO



THE PREMIER TOOLS TO COPE WITH THESE CHALLENGES ARE



High performance liquid chromatography (HPLC)



Mass spectrometry for detection (LC-MS)



HPLC STATIONARY PHASES

Crucial to the development of reliable methods for the complex nature of these samples are HPLC stationary phases that

HAVE BROAD SEPARATION CAPABILITIES

ARE RUGGED

ARE REPRODUCIBLE

SILICA HYDRIDE-BASED STATIONARY PHASES

Fulfill the requirements necessary for food and beverage analysis Especially for very polar compounds

WHAT MAKES SILICA HYDRIDE STATIONARY PHASES **CHROMATOGRAPHICALLY INTERESTING?**

All silica hydride phases can retain compounds in either





Higher surface coverage and larger bonded groups emphasize reversed phase retention

• But normal phase properties are still present

Lower surface coverage and smaller bonded groups result in greater normal phase retention

• But reversed-phase properties are still present

THESE STATIONARY PHASES ARE USEFUL FOR A WIDE VARIETY OF ANALYTES AND MATRICES



The active ingredients in chili peppers



Polyphenols in grape seed extract



Neurotoxins in seafood



Hops in beer

Caffeine in coffee drinks



Limonin in orange juice



Sorbic and tartaric acid in wine



Folic acid in cereal

AND MORE

EXAMPLE: POLYPHENOLS IN GRAPE SEED EXTRACT



Interested in learning more? Sign up for the webcast at www.chromatographyonline.com/silica



