

Bond Elut™ Plexa™

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Efficient Preparation of Phenols in Drinking Water

Advantage Statement: Varian's Bond Elut Plexa solid phase extraction (SPE) column has a very high extraction capacity for analytes and efficient removal of contaminants, making it ideal for extraction of phenols from drinking water. Plexa features a unique structure never before seen in standard styrene divinyl benzene polymer SPE columns, whereby polarity is separated between a hydrophilic exterior and hydrophobic core (Figure 1).

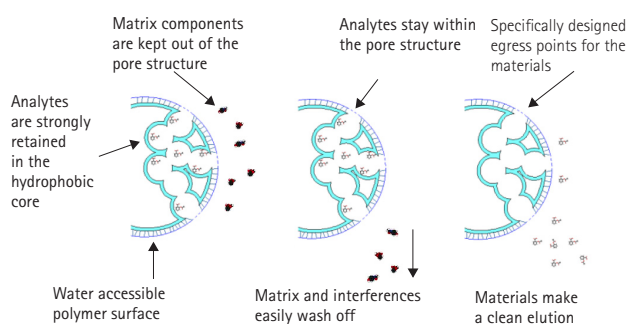


Figure 1. Varian Bond Elut Plexa retention, washing and elution mechanisms

Data of recovery of phenols from drinking water (courtesy of Tokyo Health Services Association) is shown below. Results for a widely used divinyl benzene *N*-vinyl pyrrolidone sorbent are shown in Figure 2. Results for the Varian Bond Elut Plexa column are shown in Figure 3.

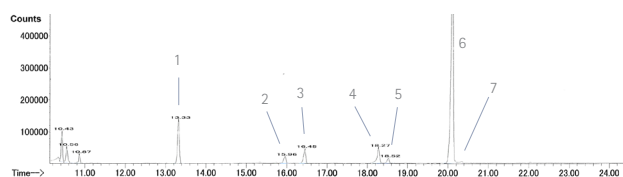


Figure 2. Gas chromatogram of the extract of a common hydrophobic/lipophilic polymer (phenols at 0.1 ppm) 1. Phenol 2. 2-chlorophenol 3. 4-chlorophenol 4. 2,6-dichlorophenol 5. 2,4-dichlorophenol 6. acenaphthene (as an internal standard) 7. 2,4,6-trichlorophenol

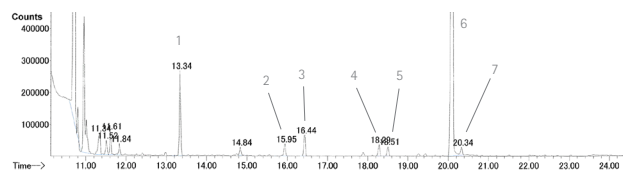
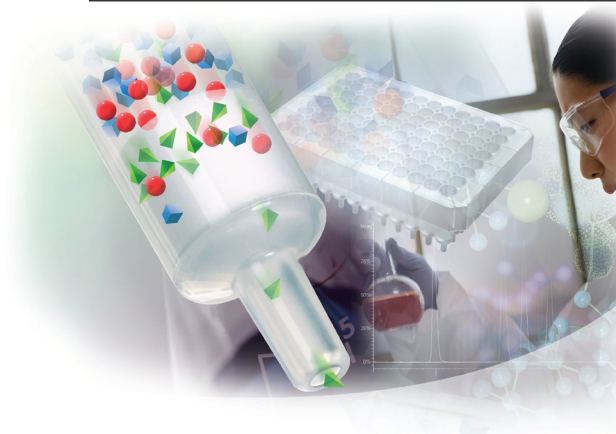


Figure 3. Gas chromatogram of the extract using Varian Bond Elut Plexa (phenols at 0.1 ppm)



Figures 4 and 5 show a comparison of extraction for one of the analytes in the phenol class, between a styrene divinyl benzene *N*-vinyl pyrrolidone SPE and Varian Bond Elut Plexa.

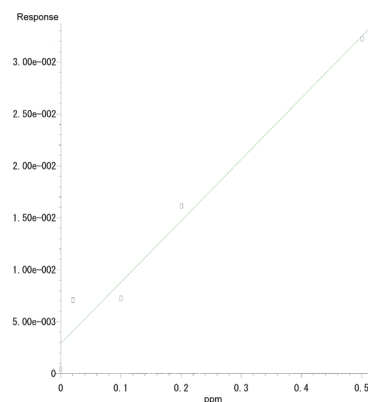


Figure 4. Calibration curve of 2,4,6-trichlorophenol using a common hydrophobic/lipophilic polymer ($R^2=0.968$)

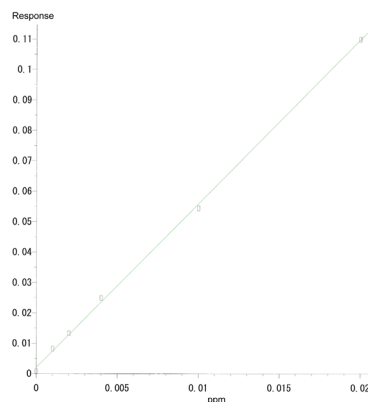
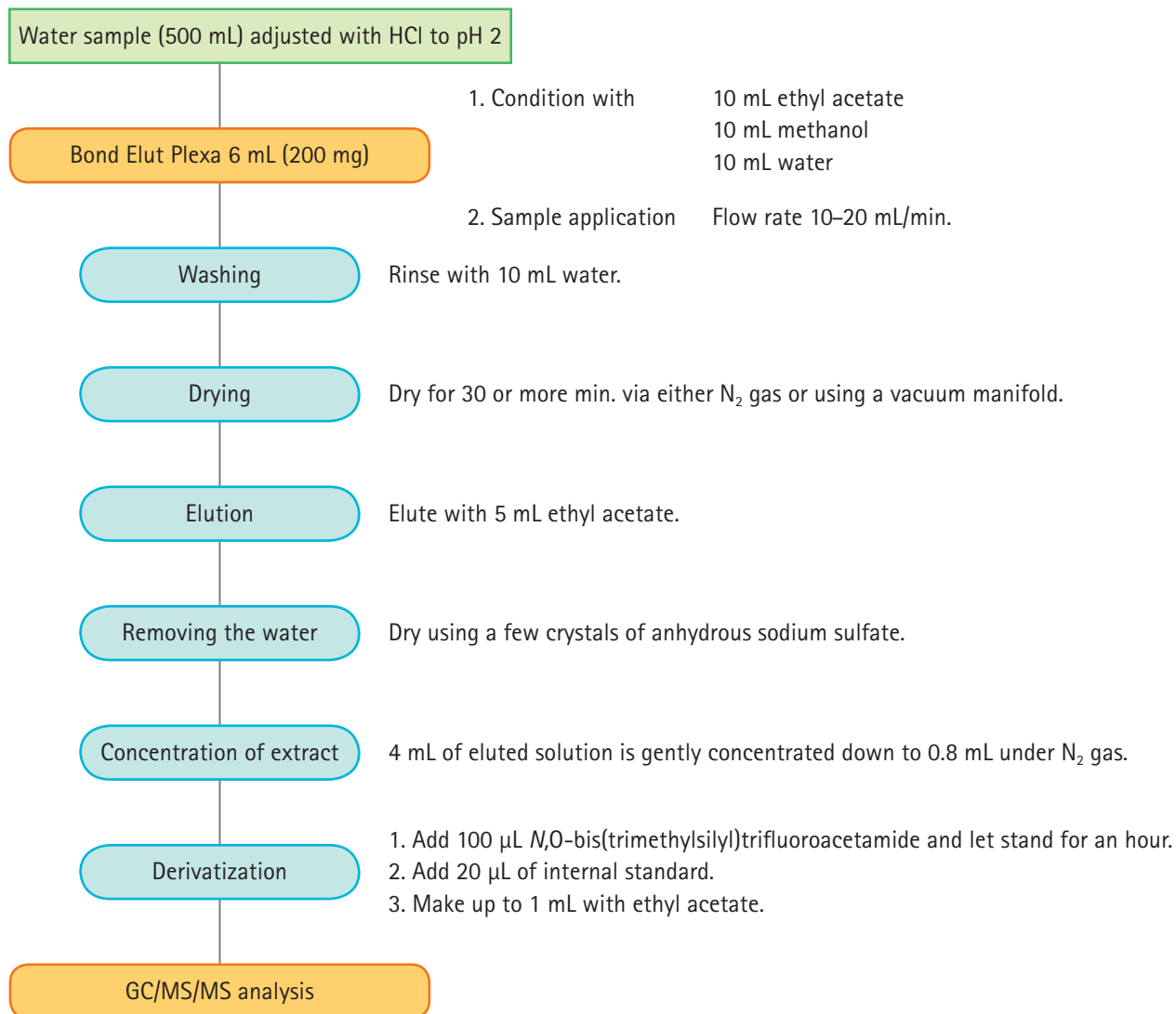


Figure 5. Calibration curve of 2,4,6-trichlorophenol extracted by Varian Bond Elut Plexa ($R^2=0.999$)

Sample preparation method of phenols in drinking water using Varian Bond Elut Plexa (200 mg)



Ordering Information

Product Name	Concentration	Volume	Part No.	Units/Pack
Bond Elut Plexa	200 mg	6 mL	12109206	30

Acknowledgements

This advantage note was sourced from the Varian Technology Japan consumables team.

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