

GC Analysis of Base/Neutral Compounds using an Agilent J&W FactorFour VF-17ms Column with EZ-Guard

Application Note

Author

Peter Heijnsdijk
Agilent Technologies, Inc.

Introduction

Guard columns are well-known for extending column lifetime when using samples with a complex matrix. Unfortunately, a guard column can cause leakage through the coupling, and the coupling device itself could introduce some active sites in the sample flow path. The EZ-Guard is an integrated guard column, which is leak-tight because it has no coupling and no active sites, maintaining peak shapes and high responses.

Basic and neutral components are widely analyzed in many multicomponent environmental methods, such as EPA 8270. The matrix extracts for these assays are often highly system and column contaminating. The EZ-Guard will effectively optimize system uptime and extend column lifetime for these types of analyses by functioning as a collector of matrix contamination.



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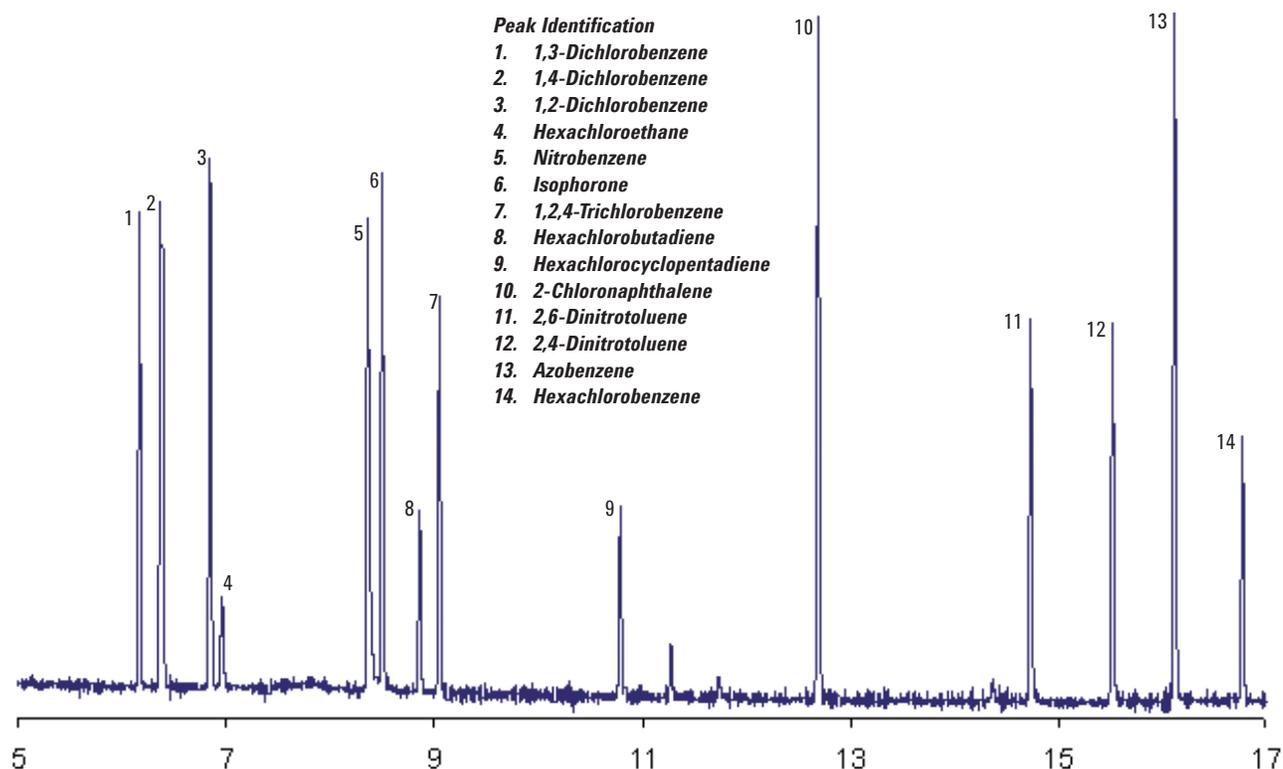


Figure 1. Separation of base/neutral compounds using a VF-17ms column with EZ-Guard

Materials and Methods

Column: FactorFour VF-17ms, 30 m x 0.25 mm, df=0.25 µm, + 10 m EZ-Guard (part number CP9025)

Sample Size: 1 µL, split ratio 1:75

Sample Conc: 20 µg/mL methylene chloride

Carrier Gas: H₂

Pressure: 80 kPa

Oven Temp: 50 °C to 300 °C (10 °C/min)

Injector Temp: 275 °C

Injector: Split

Detector Temp: 325 °C

Detector: FID

Conclusion

The VF-17ms with EZ-Guard enhances column lifetime when analyzing samples in a complex matrix, while preserving the performance of the GC column. Agilent manufactures a range of FactorFour GC columns with EZ-Guard that are quick and easy to install and operate, boosting productivity. In addition, EZ-Guard columns deliver improved efficiency because the integrated transfer line provides faster detector stabilization.

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Results and Discussion

Figure 1 shows excellent peak shape for almost all of the components. This shows that the EZ-Guard is leak-tight and inert, ensuring good peak shape.



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