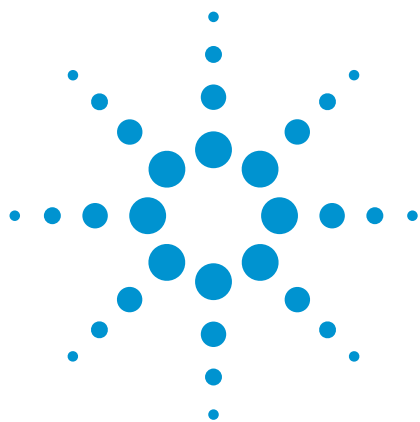




Separation of Antioxidants and UV Stabilizers Used in Plastics

Application Note

Chemical

Introduction

Commercial plastics often contain small quantities of UV stabilizers and antioxidants, introduced to alter the physical properties of the finished product and protect it from environmental degradation. Accurately controlling the inclusion of these additives in the manufacturing process is vital to ensure the quality of the finished plastic. The analysis of plastic additives in different batches of material forms an integral part of quality control protocols.

This application note describes the HPLC analysis of 19 commercially available antioxidants and UV stabilizers on an Agilent Pursuit column.



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Conditions

Sample	Standard mix
Sample solvent	THF
Column	Agilent Pursuit C18, 2.0 × 150 mm, 5 µm (p/n A3000150X020)
Mobile phases	A: 0.001 M methane sulfonic acid B: Acetonitrile
Gradient	0 min 60% B, 2 min 60% B, 18 min 100% B, 35 min 100% B
Flow rate	0.3 mL/min
Temperature	40 °C
Injection volume	10 µL
Detector	UV, 230 nm

Results and Discussion

The chromatogram in Figure 1 shows the separation of 19 commercially available UV stabilizers and antioxidants in about 30 minutes.

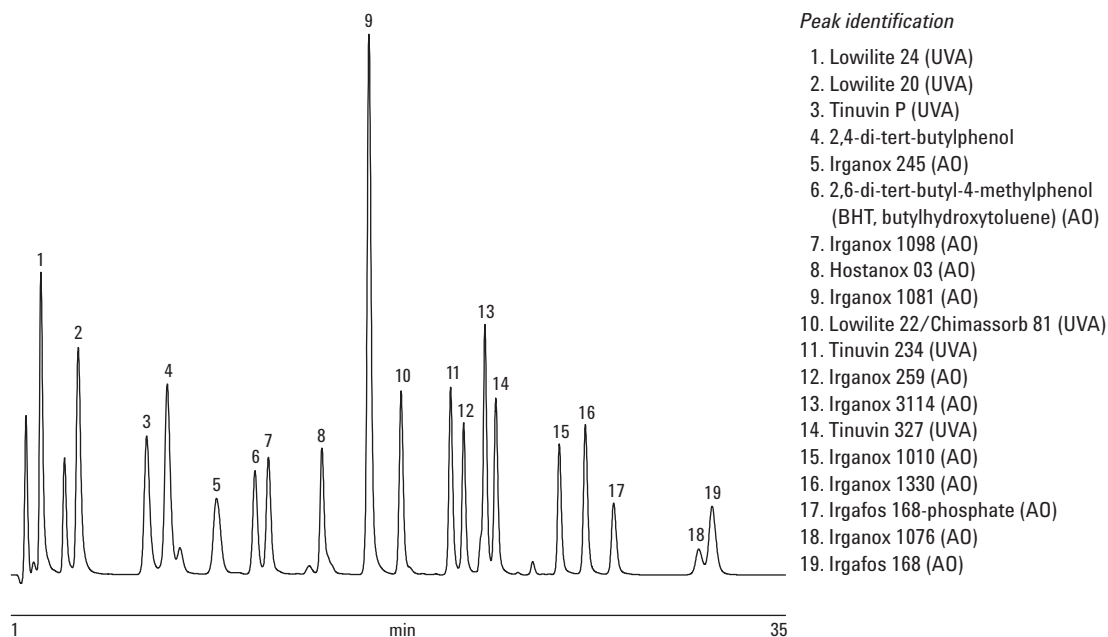


Figure 1. Nineteen UV stabilizers (UVA) and antioxidants (AO) separated by an Agilent Pursuit HPLC column.

Conclusion

A range of plastics additives was successfully separated using HPLC with an Agilent Pursuit column. The ultrahigh silica purity, extensive end-capping, and high bonded phase density of the Pursuit C18 are key to its performance in reversed-phase separations.

For More Information

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