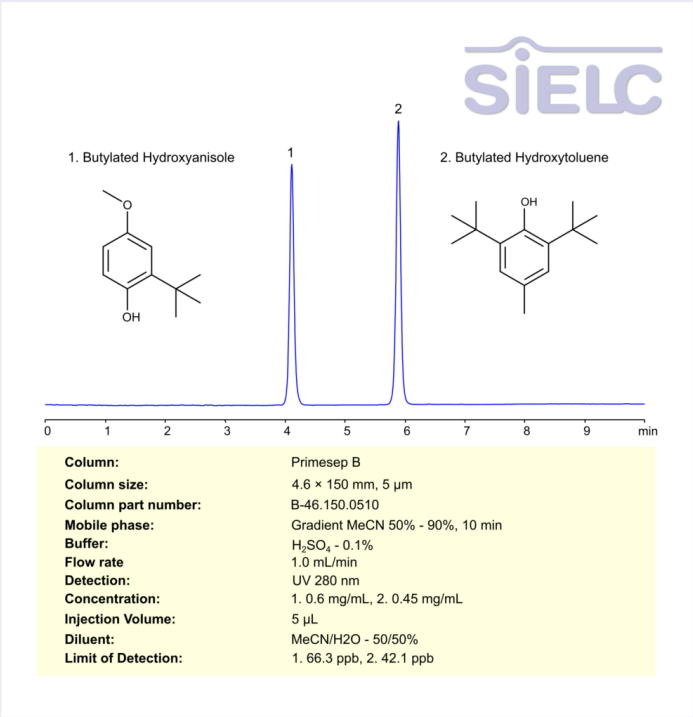
HPLC Method for Analysis of Butylated Hydroxytoluene (BHT) and Butylated Hydroxyanisole (BHA) on Primesep B Column



Column:	Primesep B
Column size:	4.6 × 150 mm, 5 µm
Column part number:	B-46.150.0510
Mobile phase:	Gradient MeCN 50% - 90%, 10 min
Buffer:	H_2SO_4 - 0.1%
Flow rate	1.0 mL/min
Detection:	UV 280 nm
Concentration:	1. 0.6 mg/mL, 2. 0.45 mg/mL
Injection Volume:	5 µL
Diluent:	MeCN/H2O - 50/50%
Limit of Detection:	1. 66.3 ppb, 2. 42.1 ppb

Butylated Hydroxytoluene (BHT) and Butylated Hydroxyanisole (BHA) are synthetic antioxidants commonly used to prevent oxidation, which can lead to spoilage, rancidity, and loss of flavor in food, cosmetics, and pharmaceuticals.

BHT is a fat-soluble compound that helps maintain the freshness of oils, fats, and processed foods by preventing them from oxidizing and becoming rancid. It is also used in some cosmetics and industrial products.

BHA is often found in processed foods, snacks, and animal feed. It helps preserve the quality of products by preventing oxidative damage that can affect flavor, color, and texture.

While both BHT and BHA are effective at prolonging the shelf life of products, concerns have been raised about their potential health risks when consumed in large quantities over time, prompting ongoing research and regulatory reviews.

Butylated hydroxytoluene , 3-tert-butyl-4-hydroxyanisole (BHA) can be retained and analyzed using the Primesep B stationary phase column. The analysis utilizes a gradient method with a simple mobile phase consisting of water, acetonitrile (MeCN), and sulfuric acid. Detection is performed using UV at 280 nm.

*LOD was determined for this combination of instrument, method, and analyte, and it can vary from one laboratory to another even when the same general type of analysis is being performed.

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Method Parameters

Column	Primesep B, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN50 – 90%, 10 min
Buffer	H2SO4 – 0.1%
Flow Rate	1.0 mL/min
Detection	UV 280 nm
Limit of Detection	1. 66.3 ppb, 2. 42.1 ppb

Quelle: https://sielc.com/hplc-method-for-analysis-bht-bha-primesep-b