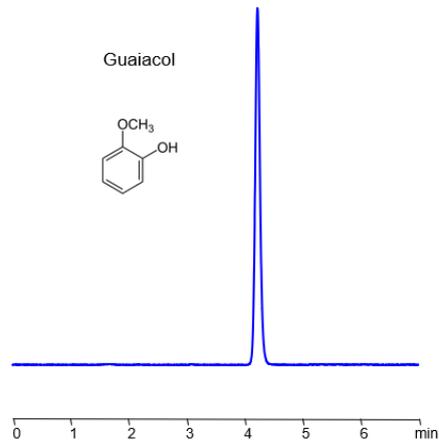


HPLC Method for Analysis of Guaiacol on Primesep 100 Column



Column:	Primesep 100
Column size:	4.6 × 150 mm, 5 µm
Column part number:	100-46.150.0510
Mobile phase:	MeCN – 10%
Buffer:	H ₂ SO ₄ - 0.2%
Flow rate:	1.0 mL/min
Detection:	UV 200, 275 nm

Separation type: Liquid Chromatography Mixed-mode

Guaiacol is an organic compound with the chemical formula C₇H₈O₂. It is a naturally occurring substance derived from guaiacum or wood creosote, and it is known for its characteristic smoky odor.

Structure and Properties:

Guaiacol is a phenolic compound, specifically a methoxyphenol. It appears as a colorless to pale yellow aromatic oil. It has a molecular structure consisting of a benzene ring with methoxy (-OCH₃) and hydroxyl (-OH) groups attached. Sources:

Naturally found in guaiacum wood, creosote, and certain plants. Can be produced synthetically through the methylation of catechol or other methods. Uses:

Flavor and Fragrance: Guaiacol contributes to the smoky flavor in various foods and is used in flavorings and perfumes. **Medical Applications:** It has been used in expectorants and antiseptics. Guaiacol derivatives are also used in the pharmaceutical industry. **Chemical Intermediate:** It serves as a precursor for the synthesis of other chemicals, such as vanillin. **Health and Safety:**

As a natural compound, guaiacol is biodegradable. Its release into the environment through industrial processes should be managed to prevent ecological damage. Guaiacol's unique properties make it valuable in various industries, from food and fragrance to pharmaceuticals and chemical manufacturing.

Guaiacol can be retained and analyzed using a Primesep 100 mixed-mode stationary phase column. The analysis employs an isocratic method with a simple mobile phase comprising water, acetonitrile (MeCN), and sulfuric acid as a buffer. This method allows for detection using UV at 210 nm

Method Parameters

Column	Primesep 100, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	MeCN/H ₂ O – 10/90%
Buffer	H ₂ SO ₄ – 0.2%
Flow Rate	1.0 mL/min
Detection	UV 200, 275 nm

Quelle: <https://sielc.com/hplc-determination-of-guaiacol>