



SMOKY COMPOUNDS DETERMINATION IN WINE



Since many years, LEC is deeply involved in the quantification of oak wood compounds in several matrixes like woods, spirits, tannins and wines. Many of those phenolic compounds are also known as smoky aromas generated by the combustion of organic material as wood or peat.

We can propose a sensitive and reliable protocol based on SBSE-TD-GCMS⁽¹⁾ after in situ derivatization⁽²⁾ of phenols, an accurate quantification is obtained thanks to several deuterated internal standards⁽³⁾ (see below).

Common Name	Chemical Name	CAS #	Odor descriptor	Internal standard
PHENOL	Phenylacetic acid	108-95-2	Smoke, chemical	mCRESOL-D8
Ortho- CRESOL	2-methylphenol	95-48-7	Smoke, tar, peat	
Meta- CRESOL	3-methylphenol	108-39-4		
Para-CRESOL	4-methylphenol	106-44-5		
GUAIACOL	2-methoxyphenol	90-05-1	Hyacinth, plaster	GAIACOL-D4
4-Methyl-GUAIACOL	2-methoxy-4methyl-phenol	93-51-6	Plaster, smoke	EUGENOL-D3
SYRINGOL	2,6-dimethoxyphenol	91-10-1	Epicé	
EUGENOL	4-Allyl-2-methoxyphenol	97-53-0	Clove pepper	
4-Methyl-SYRINGOL	4-Methyl-2,6-dimethoxyphenol	6638-05-7	Spicy, smoke	
Iso-EUGENOL	2-Methoxy-4-propenylphenol aka 4-Propenylguaiaicol	97-54-1	Clove pepper, plaster	
4-Allyl-SYRINGOL	4-Allyl-2,6-dimethoxyphenol	6628-88-9	Spicy, smoke	

The requested volume of sample is 50 mL, we can provide a result in less than 48H, do not hesitate to contact us for prices and delay.

- (1) SBSE : Stir Bar Sorptive Extraction (<http://www.gerstel.com/en/twister-stir-bar-sorptive-extraction.htm>)
- (2) Derivatization is a technique used in chemistry which converts a chemical compound into a product (the reaction's derivate) of similar chemical structure, called a derivative. Derivatization techniques are frequently employed in chemical analysis of mixtures in order to improve extraction yield and to enhance stability of targeted compounds.
- (3) An internal standard in analytical chemistry is a chemical substance that is added in a constant amount to samples, the blank and calibration standards in a chemical analysis. This substance can then be used for calibration by plotting the ratio of the analyte signal to the internal standard signal as a function of the analyte concentration of the standards. This is done to correct for the loss of analyte during sample preparation or sample inlet. A deuterated internal standard is a compound that is very similar to the targeted compounds with a slightly different molecular mass which enabling the distinction with a mass spectrum detector.

