

## Product Information

### Guaiacol

Product Number **G 5502**  
Store at Room Temperature

### Replacement for Product Number G10903

#### Product Description

Molecular Formula:  $C_7H_8O_2$

Molecular Weight: 124.1

CAS Number: 90-05-1

Melting point: 27-29 °C (upon cooling, guaiacol may remain as a liquid for a long time even at a much lower temperature)<sup>1</sup>

Boiling point: 204-206 °C<sup>1</sup>

Density: approximately 1.112 g/ml (liquid)<sup>1</sup>

Extinction coefficient:  $E^{1\%}_{1\text{cm}} = 2.55$  (274 nm)<sup>2</sup>

Synonyms: o-Hydroxyanisole, 2-Methoxyphenol

This product can be used as a hydrogen donor (substrate) in the assay of peroxidase.<sup>3,4</sup> Upon oxidation, it forms tetraguaiacol with a subsequent change in  $\lambda_{\text{max}}$  to 470 nm with an  $E^{1\%}_{1\text{cm}} = 26.6$ .<sup>3,5</sup>

The presence of guaiacol in cork stoppers is responsible for some cases of cork taint causing unpleasant alterations to wine. Data suggests that guaiacol-mediated cork taint should be attributed to the degradative action on vanillic acid by bacterial strains growing on cork to produce guaiacol.<sup>6</sup>

Two kinds of creosote have been found based on historical evidence of the medicinal uses and origins. One is wood tar creosote, a distillate of wood-tar that contains creosol and guaiacol.<sup>7</sup>

Guaiacol is able to inhibit prostaglandin biosynthesis like a classic NSAID, but it does not induce gastric damage.<sup>8</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

One gram of guaiacol dissolves in 60-70 ml of water or 1 g of glycerol. It is miscible with alcohol, chloroform, ether, oils, glacial acetic acid, and slightly soluble in petroleum ether. Although it is soluble in a sodium hydroxide solution, guaiacol forms a sparingly soluble compound in a moderately concentrated potassium hydroxide solution.<sup>1</sup>

#### References

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5. Data for Biochemical Research, 3rd ed., Dawson, R. M. C., et al., Oxford University Press (New York, NY: 1986), p. 352.
6. Alvarez-Rodriguez, M. L., et al., Degradation of vanillic acid and production of guaiacol by microorganisms isolated from cork samples. FEMS Microbiol. Lett., **220**, 49-55 (2003).
7. Baba T., and Tani T., Wood creosote: a historical study and its preparation in combination with herbal drugs. Yakushigaku Zasshi., **36**, 7-10 (2001) (article in Japanese).
8. Fossati, A., et al., Effects of metoxibutropate, ibuprofen and guaiacol on the gastrointestinal system. **13**, 45-50 (1991).

HLD/AJH 8/05

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