

**DETERMINATION OF PHENOL IN WASTEWATER SAMPLE BY
USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY
(HPLC)**

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ABSTRACT

DETERMINATION OF PHENOL IN WASTEWATER SAMPLE BY USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

The presence of phenol in water is risky to living organism as the toxicity effect causes the long-term exposure. In this research, the analysis was accomplished on a C18 column with UV-Vis detector (HPLC-UV) for determination of phenol in wastewater water while the solid phase extraction (SPE) is used as sample preparation technique. Five mL of load sample was used as the optimized variable in SPE while 0.75 mL/min was used as flow-rate on eluent in HPLC. The analytical method was validated according to the following parameter, which are precision, linear range, limit of detection (LOD), and limit of quantitation (LOQ). A good linear correlation coefficient with $R^2 = 0.9991$ was observed over the range of 3.05 to 30.0 $\mu\text{g/mL}$. The limit of detection was calculated to be 0.41 $\mu\text{g/mL}$, while the limit of quantitation value of the validated method was measured to be 1.37 $\mu\text{g/mL}$. Good recoveries were obtained in the range between 90 to 120%. In conclusion, the proposed method was found to be appropriate and accurate for the determination of phenol in wastewater by using HPLC.