Determination of phenol in water samples using cloud point extraction and UV spectrophotometry

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ABSTRACT

A cloud point extraction method is developed using silicone-ethylene oxide surfactant, DC193C to extract phenol compound in the environmental water samples. The parameters such as the effect of salt concentration, pH, temperature, surfactant concentration, and water content are evaluated. The nonionic surfactant, DC193C is chosen because it is well known as an environmental friendly solvent. The developed method obtains the high recoveries of phenol extraction from water samples with the percentage recoveries at 78–97% with the limit of detection is 0.076 mg/L. The phenol is measured using UV–vis spectrophotometer at 260 nm. The proposed method is successfully applied to the environmental water samples such as river water, lake water, sea water, and tap water for phenol extraction with satisfactory results.

Keywords: Cloud point extraction; Phenol; Nonionic surfactant; Water samples; UV–vis spectrophotometry

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