

Determination of ionol by voltammetry and coulometric titration

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Abstract

Procedures were developed for determining ionol by voltammetry and by coulometric titration with electrogenerated chlorine using the amperometric indication of the titration end point. Possible mechanisms of ionol oxidation with electrogenerated chlorine and its electrochemical oxidation at a glassy carbon and a gold electrode were discussed. Procedures were developed for determining ionol in mineral oil in analytical ranges from 1.0×10^{-4} to 1.0×10^{-2} M (RSD = 9%) and from 3.0×10^{-5} to 4.0×10^{-3} M (RSD = 9%) using a glassy carbon and a gold electrode, respectively. The detection limits for ionol at the glassy carbon and gold electrode were 2.8×10^{-4} and 1.0×10^{-5} M, respectively. The detection limit in coulometric titration was 20 $\mu\text{g/mL}$.

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