

Photodegradation of p-cresol by zinc oxide under visible light.

ABSTRACT

The degradation of p-cresol was carried out under visible light (46% sunlight) by zinc oxide as photocatalyst. To measure the efficiency of photodegradation, the different variables studied included amount of photocatalyst, concentration of p-cresol and pH. The maximum amount of photocatalyst and removed p-cresol was 1.5g/L and 25ppm respectively. The photodegradation was favorable in the pH 7-9 range. In optimum condition, total organic carbon (TOC) studies show that 94% of total organic carbon is removed from solution during irradiation time. As a result zinc oxide can remove p-cresol from wastewater under visible light irradiation, and being more economic than UV light could be applied on an industrial scale.

Keyword: Photodegradation; P-cresol; Visible-light; ZnO; Photocatalyst; Zinc oxide.