O$_3$/UV photo-oxidation for the removal of reactive yellow 3 dye from wastewater

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ABSTRACT

Chemical colors used in the textile industry are potentially risky because they are carcinogenesis and mutagenesis to humans. The current study purposed to remove reactive yellow 3 dye from wastewater using the advanced oxidation process of O$_3$/UV. Tests were performed under optimum conditions (pH = 9, contact time = 40 min, ozone concentration = 0.9 g/h, and an initial concentration of 10 mg/L reactive yellow 3 dye) on real samples. The maximum efficiency rates of removal of reactive yellow 3 dye under optimum conditions for soluble synthetic and real samples of wastewater from the Yazdbaf textile factories using the O$_3$/UV photo-oxidation process were 96% and 85%, respectively.

Keywords: Advanced oxidation; Reactive yellow 3 dye; Ozone; Photo-oxidation of O$_3$/UV