



CATALYTIC WET PEROXIDE OXIDATION OF AN AZO DYE, *REACTIVE YELLOW 84*, OVER Fe-EXCHANGED ULTRASTABLE Y ZEOLITE

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Abstract

This study presents an evaluation of the catalytic performances of an iron exchanged ultrastable Y zeolite (Fe-USY) in the wet hydrogen peroxide oxidation of an azo dye, Reactive Yellow 84 (C.I. RY84), mainly used in the textile finishing industry. The catalyst was prepared by ion-exchange, starting from a commercially available ultrastable Y zeolite. All tests were performed in a laboratory scale set-up. The obtained results indicate that the use of the described catalyst allows almost a total decolorization and an important reduction of COD and of TOC, without a significant leaching of Fe ions. Further more it was observed that, by using the Fe-USY catalyst, it is possible to extend the range of pH values for which Fenton-type oxidation can occur and no iron hydroxide sludge is formed.

Keywords: catalytic wet peroxide oxidation, textile wastewater, zeolite, reactive azo dye, Fenton oxidation

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