

## Accepted Manuscript

Title: Simultaneous Removal of 2,4,6-Tribromophenol from Water and Bromate Ion Minimization by Ozonation

Authors: Asogan N. Gounden, Sooboo Singh, Sreekantha B. Jonnalagadda



PII: S0304-3894(18)30444-8  
DOI: <https://doi.org/10.1016/j.jhazmat.2018.06.006>  
Reference: HAZMAT 19443

To appear in: *Journal of Hazardous Materials*

Received date: 3-12-2017  
Revised date: 8-4-2018  
Accepted date: 1-6-2018

Please cite this article as: Gounden AN, Singh S, Jonnalagadda SB, Simultaneous Removal of 2,4,6-Tribromophenol from Water and Bromate Ion Minimization by Ozonation, *Journal of Hazardous Materials* (2018), <https://doi.org/10.1016/j.jhazmat.2018.06.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Simultaneous Removal of 2,4,6-Tribromophenol from Water and Bromate Ion Minimization by Ozonation

Asogan N. Gounden<sup>a</sup>, Sooboo Singh<sup>b</sup> and Sreekantha B. Jonnalagadda<sup>b,\*</sup>

<sup>a</sup> Department of Chemistry, Mangosuthu University of Technology, PO Box 12363, Jacobs, 4026.

<sup>b</sup> School of Chemistry, Westville Campus, University of KwaZulu-Natal, P Bag X54001, Durban, 4000, South Africa

### Highlights

- Ozone initiated debromination of 2,4,6-tribromophenol
- Efficiency higher in basic conditions than in neutral or acidic
- Complete mineralization in basic water or with high ozone dose
- The presence of  $CO_3^{2-}$  in basic water minimized  $BrO_3^-$  formation.
- $> 10\%$   $H_2O_2$  was able to effectively decrease  $BrO_3^-$  formation in water

**Abstract** —The study investigates the degradation of 2,4,6-tribromophenol (2,4,6-TBP) and the influence of solution pH, alkalinity,  $H_2O_2$  and  $O_3$  dosage. Debromination efficiency of 2,4,6-TBP was the highest in basic water (pH = 10.61). The extent of TOC removal compared favourably with the amount of substrate converted, suggesting favourable mineralization of

Download English Version:

<https://daneshyari.com/en/article/6968262>

Download Persian Version:

<https://daneshyari.com/article/6968262>

[Daneshyari.com](https://daneshyari.com)