

Efficient Reduction of Bromate by Iodide-Assisted UV/Sulfite Process

Tuqiao Zhang ¹, Jiajie Wang ¹, Dingyun Yan ², Lili Wang ³ and Xiaowei Liu ^{1,2,*}

¹ Institute of Municipal Engineering, College of Civil Engineering and Architecture, Zhejiang University, Hangzhou 310058, China; ztq@zju.edu.cn (T.Z.); wangjiajiechn@zju.edu.cn (J.W.)

² Institute of Water Resources & Ocean Engineering, Ocean College, Zhejiang University, Hangzhou 310058, China; yandingyun@zju.edu.cn

³ Environmental Engineering, Jiyang College of Zhejiang A & F University, Zhuji 311800, China; liilive@163.com

* Correspondence: liuxiaowei@zju.edu.cn; Tel.: +86-571-8820-8721

Received: 7 November 2018; Accepted: 8 December 2018; Published: 11 December 2018

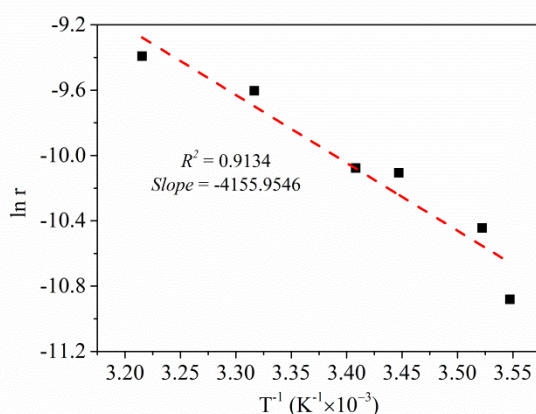


Figure S1. Determination of activation energy of BrO_3^- degradation in the UV/sulfite/ I^- process. The dash line indicates the best linear fitting of $\ln r$ Vs T^{-1} . Conditions: $[\text{BrO}_3^-]_0 = 10 \mu\text{M}$, $[\text{I}^-]_0 = 100 \mu\text{M}$, $[\text{Sulfite}]_0 = 1.0 \text{ mM}$, $[\text{DO}]_0 = 7.0 \text{ mg}\cdot\text{L}^{-1}$, $\text{pH} = 9.2$, $20 \pm 1 \text{ }^\circ\text{C}$.

Table S1. Water quality parameters of the four tap waters.

Parameters	Temperature	pH	TOC	HCO_3^-	NO_3^-	NO_2^-	SO_4^{2-}	Cl^-
	$^\circ\text{C}$							
TP1	23.70	8.47	2.26	44.53	9.76	0	18.88	14.91
TP2	25.60	8.25	5.35	50.02	10.25	0	17.97	12.86
TP3	21.30	8.69	3.25	28.06	11.78	0	12.12	9.44
TP4	24.40	8.15	47.00	89.67	14.35	0	52.58	42.99

Notes:

1. The detection of pH was after adding 1 mM SO_3^{2-} and without boric acid buffer solution.
2. No BrO_3^- was detected in the four tap waters.