SISTEMAS & GESTÃO
Revista Eletrônica

ERRATUM

Editor

ABSTRACT

This erratum corrects the article: https://doi.org/10.20985/1980-5160.2018.v13n3.1373

PROPPI / LATEC
DOI: 10.20985/1980-5160.2018.v13n4.1493

Systems & Management
Volume 13, Number 4, 2018
DOI: 10.20985/1980-5160.2018.v13n4.1493

The version of the article **"Removal of natural organic matter in water for human consumption by Homogeneous Fenton process"** published in Volume 13, Issue 3, 2018 (September), initially provided contained errors in relation to the text.

Current text:
angela.scordeiro@gmail.com

Corrected text:
scangela@ensp.fiocruz.br

Current text:
Among the more than 600 DBPs already identified are trihalomethanes (THMs) and haloacetic acids (HAAs), which are the two groups found in higher concentrations and commonly in drinking water worldwide.

Corrected text:
Among the more than 600 DBPs already identified are trihalomethanes (THMs) and haloacetic acids (HAA), which are the two groups found in higher concentrations and commonly in drinking water worldwide.

Current text:

$Fe^{2+} + H_2O_2 \rightarrow Fe^{3+} + {}^{\bullet}OH + {}^{-}OH$ (1)

$K_1 = 76\ M^{-1}s^{-1}$, T = 25 ºC
$Fe^{2+} + {}^{\bullet}OH \rightarrow Fe^{3+} + {}^{-}OH$ (2)

$K_2 = 3{,}2 \times 10^8\ M^{-1}s^{-1}$
$Fe^{3+} + H_2O_2 \leftrightarrow FeOOH^{2+} + H^+$
$FeOOH^{2+} \rightarrow Fe^{2+} + HO_2^{\bullet}$
$Fe^{3+} + H_2O_2 \rightarrow Fe^{2+} + HO_2^{\bullet} + H^+$ (3)

$K_3 = 0{,}001\text{-}0{,}01\ M^{-1}s^{-1}$, T = 25 ºC
$Fe^{2+} + HO_2^{\bullet} \rightarrow Fe^{3+} + HO_2^-$ (4)

$K_4 = 1{,}3 \times 10^6\ M^{-1}s^{-1}$
$Fe^{3+} + HO_2^{\bullet} \rightarrow Fe^{2+} + O_2 + H^+$ (5)

$K_5 = 1{,}2 \times 10^6\ M^{-1}s^{-1}$
$H_2O_2 + {}^{\bullet}OH \rightarrow HO_2^{\bullet} + H_2O$
$K_6 = 2{,}7 \times 10^7\ M^{-1}s^{-1}$ (6)

Systems & Management
Volume 13, Number 4, 2018
DOI: 10.20985/1980-5160.2018.v13n4.1493

Corrected text:

$Fe^{2+} + H_2O_2 \rightarrow Fe^{3+} + {}^{\bullet}OH + {}^{-}OH$
$K_1 = 76\ M^{-1}s^{-1}$, T = 25 ºC (1)

$Fe^{2+} + {}^{\bullet}OH \rightarrow Fe^{3+} + {}^{-}OH$
$K_2 = 3{,}2 \times 10^8\ M^{-1}s^{-1}$ (2)

$Fe^{3+} + H_2O_2 \leftrightarrow FeOOH^{2+} + H^+$
$FeOOH^{2+} \rightarrow Fe^{2+} + HO_2{}^{\bullet}$
$Fe^{3+} + H_2O_2 \rightarrow Fe^{2+} + HO_2{}^{\bullet} + H^+$
$K_3 = 0{,}001\text{-}0{,}01\ M^{-1}s^{-1}$, T = 25 ºC (3)

$Fe^{2+} + HO_2{}^{\bullet} \rightarrow Fe^{3+} + HO_2^-$
$K_4 = 1{,}3 \times 10^6\ M^{-1}s^{-1}$ (4)

$Fe^{3+} + HO_2{}^{\bullet} \rightarrow Fe^{2+} + O_2 + H^+$
$K_5 = 1{,}2 \times 10^6\ M^{-1}s^{-1}$ (5)

$H_2O_2 + {}^{\bullet}OH \rightarrow HO_2{}^{\bullet} + H_2O$
$K_6 = 2{,}7 \times 10^7\ M^{-1}s^{-1}$ (6)

Current text:
According to Heller et Padua (2010), much research has shown that the reaction of chlorine with some substances, mainly humic substances, leads to the formation of THM, organochlorine compounds that can cause problems to human health.

Corrected text:
According to Heller et Pádua (2010), much research has shown that the reaction of chlorine with some substances, mainly humic substances, leads to the formation of THM, organochlorine compounds that can cause problems to human health.

Current text:
The equivalent population was calculated taking into account a consumption of 200 L/inhabitant;

Corrected text:
The equivalent population was calculated taking into account a consumption of 200 L/inhabitant.d;

Current text:
Aguiar, A. et al. (2007), "Mecanismo e aplicações da reação de Fenton assistida por compostos fenólicos redutores de ferro", *Química Nova*, Vol. 30, No. 3, pp. 623-628.

Rice, E. W. et al. (2012) Standard Methods for Examination of Water & Wastewater (Standard Methods for the Examination of Water and Wastewater), 22 ed., American Public Health Association, American Water Works Association, Water Environment Federationm, Washington.

Badawy, M. I. et al. (2012), "Minimization of the formation of disinfection by-products", *Chemosphere*, Vol. 89, No. 3, pp. 235–240.

Brasil (2007), Fundação Nacional de Saúde. Potenciais Fatores de risco à saúde decorrentes da presença de subprodutos de cloração na água utilizada para consumo humano, Funasa, Brasília, DF.

Brasil (2011), Ministério da Saúde, Portaria nº 2914 de 12 de dezembro de 2011, dispõe sobre os procedimentos de controle e de vigilância da qualidade da água para consumo humano e seu padrão de potabilidade, Ministério da Saúde, Brasília.

Burbano, A. A. et al. (2005), "Oxidation kinetics and effect of pH on the degradation of MTBE with Fenton reagent", *Water Research*, Vol. 39, No. 1, pp. 107–118.

De Julio, M. et al. (2006), "Emprego do reagente de Fenton como agente coagulante na remoção de substâncias húmicas de água por meio da flotação por ar dissolvido e filtração", Engenharia Sanitária e Ambiental, Vol. 11, No. 3, pp. 260-268.

Dezotti, M.; Bila, D. M.; Azevedo, E. B. (2008), *Processos e técnicas para o controle ambiental de efluentes líquidos*, E-papers, Rio de Janeiro.

Fabris, R. et al. (2008), "Comparison of NOM character in selected Australian and Norwegian drinking waters", *Water Research*, Vol. 42, No. 15, pp. 4188–4196.

Fairbanks, M. (2017), *H_2O_2 - Celulose garante expansão da oferta de peróxido de hidrogênio enquanto despontam novos usos*, *Química.com.br,* available at: https://www.quimica.com.br/h2o2-celulose-garante-expansao-da-oferta-de-peroxido-de-hidrogenio-enquanto-despontam-novos-usos/

Freire, R. S. et al. (2000), "Novas tendências para o tratamento de resíduos industriais contendo espécies organocloradas", *Quimica Nova*, Vol. 23, No. 4, pp. 504–511.

Heller, L.; Pádua, V. L. (Orgs) (2010), Abastecimento de água para consumo humano, 2 ed., Ed. UFMG, Belo Horizonte.

Jacangelo, J. G. et al. (1995), "Selected processes for removing NOM: An overview", *Journal American Water Works Association*, Vol. 87, No. 1, pp. 64–77.

Sargentini Junior, E. *et al.* (2001) "Substâncias húmicas aquáticas: fracionamento molecular e caracterização de rearranjos internos após complexação com íons metálicos", *Química Nova*, pp. 339–344, Vol. 24, No. 3, pp. 339-344, available at: http://dx.doi.org/10.1590/S0100-40422001000300010.

Kang, Y. W.; Hwang, K. Y. (2000), "Effects of reaction conditions on the oxidation efficiency in the Fenton process", *Water Research*, Vol. 34, No. 10, pp. 2786–2790, available at: https://doi.org/10.1016/S0043-1354(99)00388-7.

Krasner, S. W. et al. (2006), "Occurrence of a New Generation of Disinfection By-Products", *Environmental science & technology*, Vol. 40, No. 23, pp. 7175–7185.

Latifoglu, A. (2003), "Formation of Trihalomethanes by the Disinfection of Drinking Water", *Indoor and Built Environment*, Vol. 12, No. 6, pp. 413-417.

Lucinda, C.; Seixas, R. (2016), "Prevenção Ótima de Cartéis: o caso dos peróxidos no Brasil", pp. 1–21.

Matilainen, A. et al. (2011), "An overview of the methods used in the characterisation of natural organic matter (NOM) in relation to drinking water treatment", *Chemosphere*, Vol. 83, No. 11, pp. 1431–1442.

Matilainen, A.; Sillanpää, M. (2010), "Removal of natural organic matter from drinking water by advanced oxidation processes", *Chemosphere*, Vol. 80, No. 4, pp. 351–365.

Matilainen, A.; Vepsäläinen, M.; Sillanpää, M. (2010), "Natural organic matter removal by coagulation during drinking water treatment: A review", *Advances in Colloid and Interface Science*, Vol. 159, No. 2, pp. 189–197.

Murray, C. A.; Parsons, S. A. (2004), "Removal of NOM from drinking water: Fenton's and photo-Fenton's processes", *Chemosphere*, Vol. 54, No. 7, pp. 1017–1023.

Nogueira, R. F. P. et al. (2007), "Fundamentos e aplicações ambientais dos processos Fenton e foto-Fenton", *Química Nova*, Vol.. 30, No. 2, pp. 400-408.

Richter, C. A. (2009), Água: Métodos e tecnologia de tratamento, 2 ed., Blucher, São Paulo.

Rossin, A. C. (1987), "Desinfecção", in Azevedo Netto, J. M. (Ed.), *Técnica de abastecimento de água*, CETESB/ASCETESB, São Paulo, pp. 275–302.

Singer, P.C. (2006), "DBPs in drinking water: additional scientific and policy considerations for public health protection", Journal American Water Works Association, Vol. 98, No. 10, pp. 73–80.

Świetlik, J. et al. (2004), "Reactivity of natural organic matter fractions with chlorine dioxide and ozone", *Water Research*, Vol. 38, No. 3, pp. 547–558.

Thurman, E. M. (1985), "Aquatic humic substances", in *Organic Geochemistry of Natural Waters*, Springer, Netherlands, pp. 273–361.

United States Environmental Protection Agency - US EPA (2006), *National primary drinking water regulations: Stage 2 disinfectants and disinfection byproduts rule*, *Federal Registration*.

Uyguner, C. S.; Bekbolet, M. (2005), "A comparative study on the photocatalytic degradation of humic substances of various origins", *Desalination*, Vol. 176, No. 1–3, pp. 167–176.

Wei, Q.-s.; Feng, C.-h.; Wang, D.-s.; Shi, B.-y.; Zhang, L.-t.; Wei, Q.; Tang, H.-x. (2008) "Seasonal variations of chemical and physical characteristics of dissolved organic matter and trihalomethane precursors in a reservoir: a case study", Journal of Hazardous Materials, Vol. 150, No. 2, pp. 257–264.

Corrected text:

Aguiar, A. et al. (2007), "Mecanismo e aplicações da reação de Fenton assistida por compostos fenólicos redutores de ferro", *Química Nova*, Vol. 30, No. 3, pp. 623-628.

Badawy, M. I. et al. (2012), "Minimization of the formation of disinfection by-products", *Chemosphere*, Vol. 89, No. 3, pp. 235–240.

Brasil (2007), Fundação Nacional de Saúde. Potenciais Fatores de risco à saúde decorrentes da presença de subprodutos de cloração na água utilizada para consumo humano, Funasa, Brasília, DF.

Brasil (2011), Ministério da Saúde, Portaria nº 2914 de 12 de dezembro de 2011, dispõe sobre os procedimentos de controle e de vigilância da qualidade da água para consumo humano e seu padrão de potabilidade, Ministério da Saúde, Brasília.

Burbano, A. A. et al. (2005), "Oxidation kinetics and effect of pH on the degradation of MTBE with Fenton reagent", *Water Research*, Vol. 39, No. 1, pp. 107–118.

De Julio, M. et al. (2006), "Emprego do reagente de Fenton como agente coagulante na remoção de substâncias húmicas de água por meio da flotação por ar dissolvido e filtração", Engenharia Sanitária e Ambiental, Vol. 11, No. 3, pp. 260-268.

Dezotti, M.; Bila, D. M.; Azevedo, E. B. (2008), *Processos e técnicas para o controle ambiental de efluentes líquidos*, E-papers, Rio de Janeiro.

Fabris, R. et al. (2008), "Comparison of NOM character in selected Australian and Norwegian drinking waters", *Water Research*, Vol. 42, No. 15, pp. 4188–4196.

Fairbanks, M. (2017), *H_2O_2 - Celulose garante expansão da oferta de peróxido de hidrogênio enquanto despontam novos usos*, *Química.com.br,* available at: https://www.quimica.com.br/h2o2-celulose-garante-expansao-da-oferta-de-peroxido-de-hidrogenio-enquanto-despontam-novos-usos/

Freire, R. S. et al. (2000), "Novas tendências para o tratamento de resíduos industriais contendo espécies organocloradas", *Quimica Nova*, Vol. 23, No. 4, pp. 504–511.

Heller, L.; Pádua, V. L. (Orgs) (2010), Abastecimento de água para consumo humano, 2 ed., Ed. UFMG, Belo Horizonte.

Jacangelo, J. G. et al. (1995), "Selected processes for removing NOM: An overview", *Journal American Water Works Association*, Vol. 87, No. 1, pp. 64–77.

Kang, Y. W.; Hwang, K. Y. (2000), "Effects of reaction conditions on the oxidation efficiency in the Fenton process", *Water Research*, Vol. 34, No. 10, pp. 2786–2790, available at: https://doi.org/10.1016/S0043-1354(99)00388-7.

Krasner, S. W. et al. (2006), "Occurrence of a New Generation of Disinfection By-Products", *Environmental science & technology*, Vol. 40, No. 23, pp. 7175–7185.

Latifoglu, A. (2003), "Formation of Trihalomethanes by the Disinfection of Drinking Water", *Indoor and Built Environment*, Vol. 12, No. 6, pp. 413-417.

Lucinda, C.; Seixas, R. (2016), "Prevenção Ótima de Cartéis: o caso dos peróxidos no Brasil", pp. 1–21.

Matilainen, A. et al. (2011), "An overview of the methods used in the characterisation of natural organic matter (NOM) in relation to drinking water treatment", *Chemosphere*, Vol. 83, No. 11, pp. 1431–1442.

Matilainen, A.; Sillanpää, M. (2010), "Removal of natural organic matter from drinking water by advanced oxidation processes", *Chemosphere*, Vol. 80, No. 4, pp. 351–365.

Matilainen, A.; Vepsäläinen, M.; Sillanpää, M. (2010), "Natural organic matter removal by coagulation during drinking water treatment: A review", *Advances in Colloid and Interface Science*, Vol. 159, No. 2, pp. 189–197.

Murray, C. A.; Parsons, S. A. (2004), "Removal of NOM from drinking water: Fenton's and photo-Fenton's processes", *Chemosphere*, Vol. 54, No. 7, pp. 1017–1023.

Nogueira, R. F. P. et al. (2007), "Fundamentos e aplicações ambientais dos processos Fenton e foto-Fenton", *Química Nova*, Vol.. 30, No. 2, pp. 400-408.

Rice, E. W. et al. (2012) Standard Methods for the Examination of Water and Wastewater, 22 ed., American Public Health Association, American Water Works Association, Water Environment Federationm, Washington.

Richter, C. A. (2009), Água: Métodos e tecnologia de tratamento, 2 ed., Blucher, São Paulo.

Rossin, A. C. (1987), "Desinfecção", in Azevedo Netto, J. M. (Ed.), *Técnica de abastecimento de água*, CETESB/ASCETESB, São Paulo, pp. 275–302.

Sargentini Junior, E. *et al.* (2001) "Substâncias húmicas aquáticas: fracionamento molecular e caracterização de rearranjos internos após complexação com íons metálicos", *Química Nova*, pp. 339–344, Vol. 24, No. 3, pp. 339-344, available at: http://dx.doi.org/10.1590/S0100-40422001000300010.

Singer, P.C. (2006), "DBPs in drinking water: additional scientific and policy considerations for public health protection", Journal American Water Works Association, Vol. 98, No. 10, pp. 73–80.

Świetlik, J. et al. (2004), "Reactivity of natural organic matter fractions with chlorine dioxide and ozone", *Water Research*, Vol. 38, No. 3, pp. 547–558.

Thurman, E. M. (1985), "Aquatic humic substances", in *Organic Geochemistry of Natural Waters*, Springer, Netherlands, pp. 273–361.

United States Environmental Protection Agency - US EPA (2006), *National primary drinking water regulations: Stage 2 disinfectants and disinfection byproduts rule*, *Federal Registration*.

Uyguner, C. S.; Bekbolet, M. (2005), "A comparative study on the photocatalytic degradation of humic substances of various origins", *Desalination*, Vol. 176, No. 1–3, pp. 167–176.

Wei, Q.-s. et al. (2008), "Seasonal variations of chemical and physical characteristics of dissolved organic matter and trihalomethane precursors in a reservoir: a case study", Journal of Hazardous Materials, Vol. 150, No. 2, pp. 257–264.