

Public Abstract

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Title:Removal of Disinfection By-product Precursors by Activated Carbon and MIEX

Natural organic matter (NOM) in water can react with chlorine, a commonly used disinfectant in modern drinking water treatment plants, to generate potentially toxic and/or carcinogenic disinfection by-products (DBP). Research was conducted to assess the efficacy of several materials for DBP reduction. Hawkins Sabre Series activated carbon was found to perform well but was still outperformed by MIEX, an ion exchange resin. It was found that MIEX not only performed well with regard to bulk DBP reduction, but that this was due to reduction of transphilic and hydrophilic NOM, rather than bulk NOM reductions that were greater than that of Hawkins Sabre Series. This implies that using MIEX as a form of NOM and subsequent DBP reduction in drinking water facilities with high transphilic and hydrophilic carbon content would be beneficial to consumer health.