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Reduce The Amount of Potassium Permanganate ($KMnO_4$) Used In The Disposal Of Manganese In The Water By Using (MnO_2) Generated In The Reaction Medium

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ABSTRACT

A primary use of permanganate is iron and manganese removal. Permanganate will oxidize iron and manganese to convert ferrous (2+) iron into the ferric (3+) state and (2+) manganese to the (4+) state. Disadvantages of Potassium Permanganate Use Long contact time is required. Potassium permanganate has a tendency to give water a pink color. Potassium permanganate is toxic and irritating to skin and mucous membranes. No byproducts are generated when preparing the feed solution, however this dark purple/black crystalline solid can cause serious eye injury, is a skin and inhalation irritant, and can be fatal if swallowed. Over-dosing is dangerous and may cause health problems such as chemical jaundice and drop in blood pressure. From this point been thinking about the same efficiency and alternative fading all the previous defects. This alternative is MnO_2 resulting from the reduction of $KMnO_4$ iron and manganese removal and without external additions .Use MnO_2 in iron and manganese removal save a lot of money and save processing units, which were closed because of the high cost of treatment. As it can fade all $KMnO_4$ defects and can be used continuously without extra additives and can be re-generated to ensure the continued effectiveness and quality of results.

Keywords: $KMnO_4$, MnO_2, Manganese in water, Iron and Manganese removal.