Potassium permanganate (KMnO₄) and liquid permanganate (NaMnO₄) is approved and widely used in drinking water for the treatment of taste and odor causing compounds and for the removal of iron and manganese that cause staining of plumbing fixtures. It is also accepted by the U.S. EPA as an alternate pre-oxidant for reducing the formation of trihalomethanes (THMs) and Halo Acetic Acids (HAA5). Permanganate is usually added to the raw water and is completely consumed in the treatment plant. Under normal conditions no residual permanganate is in the finished water.

In the Distribution System

If “pink water” was sent into the distribution system customers need to be informed that if they observe any pink water they should flush the tap until it clears up. Although “pink water” may be safe from a toxicological viewpoint, it is recommended that customers do not drink the pink water. A flushing program may be needed to eliminate any residual permanganate in the distribution system.

If staining of laundry and plumbing fixtures has occurred use a solution of 1/3 white vinegar, 1/3 3% hydrogen peroxide, and 1/3 water to remove these stains.

For further information on CAIROX® potassium permanganate or CARUSOL® liquid permanganate product characteristics and availability, contact Carus Chemical Company at 1-800-435-6856.
In the Plant

If a “pink water” episode does occur at the plant, it can be remedied by using the following common available chemicals, Powdered Activated Carbon (PAC), Hydrogen Peroxide (H₂O₂), or Iron Salts (e.g. FeCl₂). By using the graphs provided below, the proper dosage of these chemicals can be determined for the effective removal of excess permanganate and elimination of the “pink water”.

Figure 1. Removal of Potassium Permanganate with PAC

Figure 2. Removal of Potassium Permanganate with Hydrogen Peroxide

Figure 3. Removal of Potassium Permanganate with Ferrous Chloride

CARUS CHEMICAL COMPANY

During its more than 90-year history Carus’ ongoing emphasis on research and development, technical support and customer service, has enabled the company to become the world leader in permanganate, manganese, oxidation, and base-metal catalyst technologies.

Carus Chemical Company has technical assistance available to answer questions, evaluate treatment alternatives, and perform laboratory testing. Our laboratory capabilities include: Treatability Studies, Feasibility Studies, and Analytical Services.