

## **Influence of NOM on copper corrosion**

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### **Abstract**

Natural organic matter (NOM) profoundly affected the corrosion of copper in a moderately alkaline synthetic water. It decreased the rate of corrosion, increased the rate of copper leaching, and dispersed crystalline inorganic corrosion products. The interaction of NOM with corrosion products was modeled using separate phases of malachite and cuprous oxide. The authors concluded that NOM promotes the formation of pits in a certain narrow range of concentrations (0.1-0.2 mg/L in laboratory tests) and suppresses this type of corrosion at higher dosages. At low DOC concentrations, the main interaction between NOM and the surfaces of corroding metal and corrosion products is adsorption. The influence of NOM on corrosion of metals in real distribution systems must be studied in relation to long periods of surface aging, flow rate, concentration and type of oxidants, pH, and alkalinity.

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