

**THE USE OF CUPROUS OXIDE FOR THE DETERMINATION OF
CHEMICAL OXYGEN DEMAND**

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ABSTRACT

The standard test method for the determination of Chemical Oxygen Demand (COD) of water involves the estimation of the quantity of oxygen that certain impurities in water will consume based on the reduction of dichromate solution under specified condition. This condition requires the use of silver sulphate as a catalyst. The high cost of silver sulphate prevents many third world countries to obtain the important water quality parameter frequently. Since the catalytic activity of silver(I) ion is similar to copper(I) ion, cuprous oxide brings about the same effect as silver sulphate in the standard method. However, cuprous oxide undergoes oxidation by dichromate solution. A new method is described based on the use of cuprous oxide where the oxidation of cuprous ion is considered in the calculation. Comparative studies with many impurities in water and some individual effluents reveal that cuprous oxide is a suitable substitute for silver sulphate.