



CHLORINE DIOXIDE - METHOD B

Free Chlorine Dioxide - CD01/CD02 (0-30ppm ClO₂)

Guidance on Activ-Ox Test Method Selection and control for Domestic Water Applications

Where water is used for drinking or cooking purposes the UK Drinking Water Inspectorate indicates that the Total Oxidant Level should not exceed 0.5mg/l at the point of use. This can be measured using drop test **Method A**.

The Health and Safety Commission document "Legionnaires' Disease, The Control of Legionella bacteria in water systems, Approved Code of Practice and Guidance (L8)" indicates that for Legionella control a Free Chlorine Dioxide Residual of at least 0.1mg/l should be maintained at the outlets. This can be measured using drop test **Method B**.

Therefore if using Activ-Ox for Legionella control in domestic water applications it is normal to analyse the water using both **Method A** and **Method B** and record the results as total oxidant and free chlorine dioxide respectively.

There is often a balancing act to be maintained between keeping within the total oxidant upper limit of 0.5mg/l and the free chlorine dioxide lower of 0.1mg/l. During the clean up phase on a system the free chlorine dioxide limit of 0.1mg/l may not be achievable at remote outlets without exceeding the 0.5mg/l at outlets close to the point of addition. Some engineering modifications e.g. flushing valves may be required to ensure adequate levels can be achieved at the remote outlets.

Method C is an alternative to Method B for low ranges of ClO₂ (0-3mg/l) - use RGPK017.

CHLORINE DIOXIDE - METHOD B

Free Chlorine Dioxide Test

Reagents and Equipment

Chlorine Dioxide - Free (Dropper titration) RGPK007 – Includes:

Feedwater CD01 Solution - **CD01**

Feedwater CD02 Solution - **CD02**

Method

Take a 200ml sample and transfer to a 250 ml conical flask.

2. Add 25 drops of CDO1 solution and swirl to mix.

Moisten and wipe the tip of the CDO2 dropper to ensure it is clean and then add it to the sample one drop at a time, mixing well between each addition, until the appearance of the first blue/green tinge.

Count the number of drops of CDO2 used.

Calculate the Chlorine Dioxide concentration in the sample using the following formula:

$$\text{Chlorine Dioxide (ppm)} = \text{Number of Drops of CD02 used} \times 0.05$$

Example

Number of drops of CDO2 used = 10

Chlorine Dioxide $0.05 \times 10 = 0.5$ ppm