

**Application**

**Titroline alpha *plus***

**Determination of Chlorine  
with DPD**

**SCHOTT**  
Instruments

## USE

Chlorine reacts with N,N –Diethyl phenylene diamine sulphate at pH 6.5 to a red dyestuff. This dyestuff reacts with Ammonia iron (II) sulphate. The method is suitable for concentrations of free chlorine between 0.1 and 4 mg/l.

## APPLIANCES

TitroLine alpha plus TL 20 plus  
TM 135 magnetic stirrer or other stirrer

## ELECTRODES

Elektrode: Pt 1200/Pt 1400 with cable L1NN  
Elektrolyte: -

## REAGENTS

Solvent:	dest. Water
Titer determination:	Potassium di-chromate
Titration agent:	Ammonia iron (II) sulphate 0.0025 mol/l
other Reagents	DPD, H <sub>2</sub> SO <sub>4</sub> conc., phosphate buffer 6.5

## DESCRIPTION

### Preparation of the titrant

Weigh in 19.607 g Ammonia iron (II) sulphate in a 1 L volumetric flask, add appr. 200 ml dest water and add then slowly 5 ml H<sub>2</sub>SO<sub>4</sub> conc. Fill up to 1 L with dest. water.

This is the standard solution. Please avoid sun light. Prepare daily fresh the titrant solution from the standard solution. Pipette 50.0 ml in a 1 L volumetric flask and dilute it to the mark with dest. water.

### Preparation of the DPD reagent

Add in a 1 L volumetric flask 200 ml dest water, 0.8 g EDTA-Na<sub>2</sub>. and then 2 ml H<sub>2</sub>SO<sub>4</sub> conc. Add to this mixture 1.1 g. N,N –Diethyl phenylene diamine sulphate and fill up to the mark with dest. water. Please let stay this solution in darkness. The solution is very unstable.

### Preparation of phosphat buffer solution pH 6.5

Add in a 1 L volumetric flask, 200 ml dest. water and dissolve 24 g Di sodium hydrogenphosphat, 46 g Potassium hydrogenphosphate and 0.8 g EDTA-Na<sub>2</sub>. Fill up to the mark with dest. water.

### Titration

The water sample should not be shaken. Avoid strong sun light. It is recommend to analyse the sample as soon as possible.

In a 150 glass beaker, erlenmeyer flask, or titration vessel TZ 1758 add the water sample (max 100 ml with max. 0.4 mg free chlorine), 5 ml DPD reagent and 5 ml buffer solution. Place the electrode and burette tip in the sample mixture and start the method. Use the  $\mu$ A/dead stop titration mode.

## LITERATURE

Also refer to „Deutsche Einheitsverfahren für Wasser-, Abwasser- und Schlammuntersuchung“ (German unified procedures for water, sewage-water and mud examination) DIN 38 409 Part 5 (ISO 8467).

---

**Schott-Instruments GmbH**

Hattenbergstrasse 10

D-55122 Mainz

Phone +49 6131 66 5111

Fax: +49 6131 66 5001

e-mail: [titration@schottinstruments.com](mailto:titration@schottinstruments.com)

[www.schottinstruments.com](http://www.schottinstruments.com)

**SCHOTT**  
Instruments