any): phosphate (100 mg; pH 2), thiosulphate (100 mg; pH 3), fluoride (100 mg; pH 2), tartrate (550 mg; pH 3), citrate (550 mg; pH 3), lead(II) (100 mg), aluminium (100 mg; citrate), antimony(III) (50 mg; tartrate), zirconium (100 mg; tartrate, citrate), titanium (50 mg; tartrate), molybdate (100 mg; tartrate), tungsten(VI) (100 mg; tartrate).

The following ions do not interfere at pH 2 even in 100-fold amounts: sulphate, bromide, tartrate, citrate, zinc, cadmium, magnesium, calcium, strontium, barium, manganese(II), beryllium and uranium(VI).

The relative standard deviation has been found to be in the range of 0.5—0.75%.

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N-Chloroacetamide as a Redox Reagent

Potentiometric Determination of Common Reductants and Hydrazines

N-Chloracetamid als Redoxreagens. Potentiometrische Bestimmung üblicher Reduktionsmittel und Hydrazine

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In a previous paper [1] N-chloroacetamide was described as a redox reagent for the determination of thiourea and its organic derivatives in sulphuric acid medium. In the present study, the use of N-chloroacetamide as a redox reagent has been extended to the determination of common reductants (arsenious oxide, potassium iodide, potassium thiocyanate, stannous chloride or thallous nitrate) and hydrazines (4-phenylsemicarbazide hydrochloride, p-methoxybenzalsemicarbazone, benzalsemicarbazone, phenylhydrazine hydrochloride, 2:4-dinitrophenylhydrazine, vanillinsemicarbazone, semicarbazide hydrochloride, hydrazine sulphate, benzalazine or β-acetylphenylhydrazine) in hydrochloric acid medium by a potentiometric method.

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Experimental

A known weight of each compound was taken in a beaker; sufficient water and enough of hydrochloric acid were added to keep normality of the solution at 2.5 to 4.0 N and its volume to 80 ml. Each titration mixture was titrated potentiometrically with the standard 0.1 N N-chloroacetamide solution at room temperature, except thallous nitrate which was titrated at 60°C.

The potentiometric titrations were performed with platinum wire electrode as an oxidation-reduction electrode and saturated calomel electrode as reference electrode. The progress of the reaction was studied with Mullard potentiometer. A sharp jump in potential was observed at the equivalence point in each titration. A series of potentiometric titrations was performed with different amounts of each compound.

From the volume of the oxidant used corresponding to the equivalence point in each titration, the amount of each compound was calculated. 10 to 100 mg of the above mentioned compounds could be determined with a maximum deviation of 0.8%. The hydrazine group in hydrazine and its organic derivatives is oxidised to nitrogen with a four-electron change.

Reference

1. Singh, B., Nistandra, S. C., Verma, B. C.: Z. Anal. Chem. **257**, 348 (1971).

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1,5-Di-β-naphthylthiocarbazone as an Extractive Indicator for the Determination of Cadmium with EDTA

1,5-Di-β-naphthylthiocarbazon als Extraktionsindicator für die Bestimmung von Cadmium mit ÄDTA

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During investigations of the colour reactions with 1,5-di-β-naphthylthiocarbazone (HDNZ), it has been found that cadmium, lead [1] and zinc [2] give coloured complexes which are extractable into chloroform and carbon tetrachloride. In the case of cadmium the colour reaction is very sensitive. It was therefore thought worth while to carry out the complexometric titration of cadmium with EDTA using 1,5-di-β-naphthylthiocarbazone.