is smaller than is desirable. Whereas, however, the sulfonephthaleins are to be preferred in general indicator application, Fast Green F C F may well prove useful under some circumstances.

Summary

Spectrophotometric data are supplied for the determination of hydrogen ion concentrations over the *P*H range between 6.7 and 10.0 with Fast Green F C F.

The apparent dissociation constant of the dye in this range is approximately 8.1(5) at 29°.

WASHINGTON, D. C.

NOTE

Note on Colorimetric Estimation of Titanium by Hydrogen Dioxide Method.—The employment of hydrogen dioxide as reagent in the colorimetric estimation of titanium compounds, in acid solution, constitutes an accurate and rapid method for the determination of small quantities of this element.

It has been ascertained[1] that the presence of phosphoric acid produces a slight fading of the yellow to orange coloration, even when present in small amounts, rendering corrections essential to the accuracy of the procedure.

During experimental work undertaken and carried out by the writer, the fact has been observed that the addition of uranium acetate to the solution of titanium salt in solutions containing free hydrogen ions eliminates entirely the tendency to fading, at temperatures ranging from 20 to 50°. The inhibiting effect of the uranium compound upon the $PO_4^{\equiv}$ ion is not so pronounced at temperatures in excess of the maximum figure furnished.

It has been found that the uranium compound, in the proportion of 1 cc. of 0.1% solution to each 0.1 mg. of the element under examination, is most satisfactory in stabilizing the coloration produced by the action of hydrogen dioxide on titanium salts in solutions containing phosphoric acid, thus counteracting the tendency of the acid in question to decrease the intensity of the original coloration obtained.

The effect of the uranium acetate solution is independent of the amount or quantity of phosphoric acid or its compounds present in the solution under investigation.

CONTRIBUTION FROM THE
CHEMICAL LABORATORY OF THE
BUREAU OF STANDARDS, DEPARTMENT OF PUBLIC WORKS
CITY OF BALTIMORE, MARYLAND
FREDERICK G. GERMUTH

RECEIVED APRIL 10, 1928
PUBLISHED JULY 6, 1928

---

[1] P. Faber, *Z. anal. Chem.*, **46**, 277 (1907).