

denum atoms are at  $(\frac{121}{334})$   $(\frac{213}{334})$  and the sulfur atoms at  $(\frac{12}{33}u)$   $(\frac{21}{33}u)$   $(\frac{1}{3}\frac{2}{3}-u)$   $(\frac{2}{3}\frac{1}{3}+u)$  where  $u = 0.621 \pm 0.004$ .

PASADENA, CALIFORNIA

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### NOTES

#### A Lecture Table Demonstration of Solubilities, or of Indicator Action.—

The following procedure gives a pretty and striking lecture-table demonstration in connection with a discussion either of solubilities or of indicator action. Azolitmin, litmus, or any of the common anthocyan pigments of fruits or vegetables which are soluble in amyl alcohol when in their acid form may be used as the indicator pigment. The procedure is as follows. Place a convenient volume (25–50 cc.) of a neutral aqueous solution of the pigment in a tall, slender show glass such as a glass-stoppered cylinder or a long, slender separatory funnel, and add 4 or 5 drops of 0.1 *N* alkali (other than ammonium hydroxide). Add an equal volume of neutral amyl alcohol, shake the mixture gently and allow the liquid layers to separate. The pigment, in its alkaline color, will appear exclusively in the water layer. Add 8 or 10 drops of 0.1 *N* acid, shake and allow to separate. The pigment will now appear, in its acid color, exclusively in the alcohol layer. It is also possible, if so desired, by adding the proper amount of acid or alkali to produce exact neutrality, to get a part of the pigment in its acid color in the alcohol layer and a part in its alkaline color in the aqueous layer.

The only precaution in manipulation which is necessary is to avoid too violent shaking of the mixture, especially when alkaline, so as to break the amyl alcohol into small drops which only slowly separate from the aqueous layer.

Occasionally, by rather violent agitation, may be collected all of the alkaline pigment adsorbed at the surface interfaces of a layer of droplets between an upper clear layer of alcohol and a lower clear layer of water.

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**A Post-Office Box for Keeping Analytical Weights.**—A post-office box arrangement, for keeping the analytical weights used by students in quantitative analysis, was made to contain 35 small boxes provided with combination locks. The case was placed against the wall in the balance room (the back of the case being open), hung on hinges so that it might be swung out and the weights examined after every laboratory period.

The above arrangement makes it possible among other advantages to protect the weights from laboratory fumes, and to place the responsibility for the weights only upon those who use them.

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