

filtered off and an attempt made to dry it, even at as low a temperature as  $40^{\circ}\text{C}$ ., or at room temperature for some time, it became brown and resinous. Purification by recrystallization was resorted to with no better results, inasmuch as the purified substance always turned brown and gummy. The melting point could not be determined for the same reason. No difficulty was experienced in obtaining good crystals of sharp melting point from cottonseed oil (tetrabromlinolic acid) in a parallel experiment.

It is known that cottonseed meal when fed to hogs affects the lard (melting point, titer) and such lard also responds to the Halphen test. In the case of the six samples which we investigated, a negative result was obtained when the Halphen test was applied.

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### NOTES.

*Preparation of a Solution for Making Standard Solutions of Sodium Hydroxide.*—Prepare an approximately 50 per cent. solution of sodium hydroxide by dissolving 50 grams of ordinary C. P. caustic soda sticks in 50 cc. of distilled water and leave tightly stoppered over night. The major portion of the impurities is insoluble in such a concentrated solution. The next day the proper amount of the clear supernatant solution is weighed or measured out, as most convenient, and diluted to the mark with freshly boiled, distilled water. Theoretically 8 grams or 5.25 cc. are required per liter of  $N/10$  solution but, owing to the impurities which have settled out, it is safer to use 8.5 grams or 5.75 cc. per liter and then standardize against  $N/10$  acid.

With such a standard solution, made up as directed and kept in an automatic burette with a potash bulb to purify the air that enters the apparatus, the strength is maintained indefinitely, while one drop of  $N/10\text{H}_2\text{SO}_4$  is more than sufficient to render 25 cc. of the solution, already neutralized to phenolphthalein, acid to methyl orange, showing that it is practically completely free from carbonates, etc. In proof of this, barium hydroxide gives no precipitate when added to 25 cc. of the solution. The remainder of the strong caustic soda solution, if kept tightly stoppered, will furnish material for the preparation of future supplies when needed.

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*The Action of Hydrochloric Acid on Manganese Dioxide.*—In a preliminary paper<sup>1</sup> by one of the authors, some of the products formed by the interaction of hydrogen chloride and manganese dioxide in non-aqueous solutions were described. Since that time a further investigation of this subject has been carried on. The work confirms the existence of manga-

<sup>1</sup> THIS JOURNAL, 29, 1277 (1907).