

● CONDUCTIVITY WATER PREPARATION

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RECENTLY at our laboratory it was necessary to obtain conductivity water. We found that by redistilling our ordinary laboratory distilled water from alkaline permanganate in a block-tin conductivity still we consistently obtained a product of pH 5.5–5.7 due to the equilibrium solubility of atmospheric carbon dioxide. We found that boiling this water and subsequently cooling it under an inert atmosphere such as purified hydrogen or nitrogen did not completely free it of dissolved CO₂ as indicated by a pH of 5.8–6.2. Dissolved carbon dioxide may be effectively removed by purging the water with CO₂-free air for several hours. Water treated in this manner was found to exhibit a pH of 7.9–8.1 at 25°C., its basicity being due to the presence of traces of ammonia which are not completely de-

stroyed or are retained in the distillation of conductivity water from alkaline permanganate.² In order to obtain water which consistently exhibited a neutral reaction, it was necessary to redistill the conductivity water from a very dilute solution of a nonvolatile acid which forms a stable ammonium salt.

Conductivity water was prepared by distilling ordinary distilled water from alkaline permanganate solution in the conductivity still. This product was then transferred together with from three to five drops of H₂SO₄ to a three-liter all-Pyrex glass still and redistilled under CO₂-free nitrogen. Finally the water was flushed with purified hydrogen. This product consistently had a pH of 6.9–7.2 at 25°C.

¹ Present address: Parker Rust Proof Co., Detroit, Michigan.

² CRANSTON, J. A., AND H. F. BROWN, *Trans. Faraday Soc.*, **33**, 1455 (1937).