NIST pH standard reference materials supports one of manufacturing's most measured properties

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Credit: National Institute of Standards and Technology

NIST has released a pH reference material in a uniquely stable form for calibrating the instruments used by a wide variety of manufacturers. pH

is one of the most measured properties during the manufacture of pharmaceuticals, consumer products like detergents and toiletries, and commodity chemicals.

Aqueous solutions (solutions of water plus other dissolved substances) are required for many industrial processes, some of which require a specific pH. The measurement of pH indicates whether the solution is basic or acidic. Solutions below 7 on the fourteen-point pH scale are acidic; while solutions above 7 are basic. With a pH of 12, Standard Reference Material 2193b is the most basic, or alkaline, of any of the NIST reference materials for calibrating the electrodes used for measurements of pH.

NIST provides its reference materials for calibrating electrodes used in pH measurements as powders, which were carefully selected to ensure long-term stability. Each unit of SRM 2193b is 30 grams of calcium carbonate, a common substance found in limestone and shells, provided in powder form with detailed instructions for how to transform it into a saturated aqueous solution of calcium hydroxide for instrument calibration. NIST provides Certified Values, meaning that NIST has the highest confidence that all known or suspected sources of measurement bias have been evaluated, of the pH of the solution at temperatures from 5 °C to 50 °C.

Provided by National Institute of Standards and Technology