SOA S-100

Preparation of Solution and Test Method for pH and Optical Brightener

1. Scope

1.1 This method describes the laboratory procedures used when preparing a solution that requires dilution for testing in the SOA program.

1.2 This method describes the verification of the pH of the solution or diluted solution during testing in the SOA program.

1.3 This method describes the verification of presence of optical brighteners in the solution or diluted solution during testing in the SOA program.

2. Safety

2.1 This practice does not purport to address all the safety concerns, if any, associated with its use. It is the responsibility of the user of this practice to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

3. Terminology

3.1 Dilution: Weakening (reducing the concentration) by the addition of water.

4. Apparatus and Materials

4.1 Volumetric glassware for measuring solution and water
4.2 Glass container for mixing solution and water
4.3 Distilled water
4.4 Portable or benchtop pH meter
4.5 4 pH buffer solution
4.6 10 pH buffer solution
4.7 White, unprinted paper towels
4.8 Circle template
4.9 Hot plate
4.10 Ultraviolet light source

5. Procedure for Diluting Solution

5.1 Refer to SOA Chain of Custody (COC) for dilution rate in ounces per gallon. Do not use any dilution rate other than the dilution rate provided on the COC.
5.2 Measure the ounces of solution found on the COC dilution rate.
5.3 Measure a gallon of distilled water. Heat water prior to mixing if specified in the COC.

6. Procedure for Verifying pH of the Solution

6.1 Follow the manufacturer's instruction for use of the pH meter.
6.2 Measure the pH of the 4 pH and 10 pH buffer solutions to confirm meter standardization. Adjust meter if necessary to achieve correct readings.
6.3 Pour an adequate quantity of the solution to be tested into a clean beaker or other appropriate container compatible for use with the pH meter electrode.
NOTE: Test the solution (or diluted solution) as it is to be used for testing. Diluted solutions must be tested at the dilution rate stated on the SOA Chain of Custody.
6.4 Measure the pH of the solution in accordance with the pH meter manufacturer's instructions allowing adequate time for the reading to stabilize.

7. Verifying the Presence of Optical Brighteners

7.1 Pour 3 to 5 ml of cleaning solution through the circle template onto a paper towel.
7.2 Allow cleaning solution to dry in ambient air, rinse with tap water 30 seconds.
7.3 Allow to dry in ambient air.
7.4 View the solution treated paper towel using an ultraviolet light source and compare to an untreated paper towel. A fluorescent glow of the treated paper towel indicates the presence of optical brighteners.

8. Report

8.1 Identifying information for the cleaning solution.
8.2 Dilution rate for the solution. Ready to use solutions that do not require dilution should be recorded as N/A for dilution rate.
8.3 pH of the solution to the nearest 0.1 decimal point
8.4 Record verification of the presence of Optical Brighteners as "Detected" or "None."