Field Determination for ULTRAHIB and ULTRAHIB NS

#145-95 - 115V
#145-96 - 230V

Instruction Manual

Updated 3/18/2010
Ver. 2.1

Scope

Establish the basic guidelines for determining the ULTRAHIB and ULTRA-HIB NS concentrations. The procedure is the same for both products, only the calculation in the Results section differs.

Components

#131-15	Graduate; 20 mL; 100%
#145-95-002	Watch Glass; 2.5" Diameter
#145-95-003	Buffer Capsule; pH 4; Qty: 2
#145-95-004	Buffer Capsule; pH 7; Qty: 2
#145-95-005	Buffer Capsule; 10 pH; Qty: 2
#147-16-3	Double-Junction Waterproof pH Tester 2
#152-45	Heated Magnetic Stirrer with Teflon Coated Stir-bar; 120V; 50/60 Hz; 725 Watts
#153-35	Polycarbonate Case for 1, 2, & 5 mL Pipettes; Qty: 3
#153-36	Glass Pipette; 2 mL × 1/10 mL
#153-38	Glass Pipette; 5 mL × 1/10 mL; Qty: 2
#153-42	Fast-Release Pipette Filler; 10 mL
#153-51-3	50-mL Glass Beaker
#162-75	Utility Box
#206-04	Deionized Water; 32 oz.
#260-01	Sodium Hydroxide Solution; Standard N/10; 16 oz.
#275-02	Hydrochloric Acid; 0.1.N; 8 oz.

Safety

Do not run this test in sodium formate or potassium formate Ultradril systems due to the potentially dangerous formic acid vapors that will evolve when the sample is acidified.

Procedure

1. Obtain at least 5 mL of filtrate.

2. Place 15 mL of deionized water into the 30-mL beaker. Add the stir bar.

3. Transfer 2 mL of filtrate to the beaker.

4. Place a pH meter into the diluted sample and record the initial pH.

5. Add 0.1 N HCl until the sample solution reaches pH 3.

6. Cover the beaker with the watch glass and boil the sample on a hot-plate for 5 minutes.

7. Allow the sample to cool to room temperature.

8. Place a pH meter into the acidified sample and record the initial pH.

9. Add 0.1 N NaOH, drop by drop, until the pH is 7.

10. Titrate from pH 7 to pH 10.5 using 0.1 N NaOH. Record the mL of 0.1 N NaOH required for the titration. Substitute this value for "A" in the equations below.

    V% ULTRAHIB = (A × 0.78) - 0.24

    V% ULTRAHIB NS = (A × 1.09) - 0.37