

PREMIER MAGNESIA - GILES CHEMICAL

COMPANY PROCEDURE

USP pH: Magnesium Sulfate Heptahydrate

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Procedure Number: QA-LAB-35

Revision: 00

Effective Date: 03/14/2012



Safety:

Wear safety glasses and goggles when working in the lab.

Ballew

Author:

Personnel responsible:

Lab

Purpose:

To determine the pH of magnesium sulfate heptahydrate in solution.

Test Method:

USP Monograph: Magnesium Sulfate, and General Chapter <791>

Equipment:

- pH Meter System VWR SB-20
- Balance Mettler Toledo X5105Du, B13929Z316
- 150-mL Beaker
- Supply of De-ionized Water
- Supply of Buffer Solutions pH 4.00, 7.00 and 10.00
- Magnetic Stirring Plate
- Magnetic Stirring Bars 1" length
- Sheet of 8½" x 11" office letter paper

Procedure:

The pH system should be calibrated once per working day.

- 1. (NOTE: If using Test Solution from USP Identification Test, skip to step 3). Weigh approximately 5.00 g of the sample on a piece of paper using the analytical balance.
- 2. To a 150-mL beaker add 100 mL of H_2O .
- 3. Place the beaker on the magnetic stirring plate and add the sample.
- 4. Add a stir bar to the beaker and turn stirring plate on (½ to ¾ max. setting).
- 5. Remove protective laboratory film from the probe tip, remove probe tip from storage solution, rinse the tip with de-ionized water, and wipe with paper towel.
- 6. When the sample has completely dissolved, place the probe in the solution and turn on the pH meter.
- 7. Record the pH value one minute later. The level will have stabilized sufficiently in that interval.
- 8. Remove probe, rinse with de-ionized water, place back into storage solution and replace the protective laboratory film.

The pH of magnesium sulfate heptahydrate should be between 5.0 and 9.2 in a 1 to 20 solution.



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Calibration and Maintenance of the VWR Model SB20 pH meter (daily and weekly):

Daily Calibration:

- 1) Place the pH electrode into the pH 4.0 calibration buffer.
- 2) Press lower left key on the pH meter to turn the unit on.
- 3) Press the cal key and "calibrate" will be displayed in the lower field. "P1" will be displayed indicating it is ready for the first buffer point.
- 4) When "ready" flashes, record that value on pH Meter Calibration Log. And press "ok" to accept the pH value. "P2" will then be displayed.
- 5) Rinse the electrode with distilled water and place the electrode into the pH 7.0 buffer.
- 6) When "ready" flashes again, record that value on pH Meter Calibration Log and press the "ok" key. "P3" will then be displayed.
- 7) Rinse electrode with distilled water and place the electrode into the pH 10.0 buffer.
- 8) When "ready" flashes again, record that value on pH Meter Calibration Log and press the "ok" key.
- 9) The display will freeze for 2 seconds, and then the slope will momentarily be displayed. Record the slope on pH Meter Calibration Log. The slope should be between 92-102%.
- 10) Meter will automatically advance to the measure mode. Rinse electrode and place into sample or storage solution.

Weekly Maintenance:

To be done before daily calibration

- 1) Inspect the electrode for scratches, cracks, salt/crystal build up, or membrane/junction deposits.
- 2) Rinse off salt build up with distilled water and remove any other deposits as indicated in manual.
- 3) Replace storage solution.
- 4) Record maintenance completion on pH Meter Calibration Log along with calibration data.



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Revision Number	Revision Date	Effective Date	Revision Author	Quality Approval	Production Approval	Revision Description
00	03/14/2012	03/14/2012	Stephen Ballew	Deborah Durbin	Jason Bumgarner	New Document