

Results:

Sample Identification: 1, pHenomenal (pH110); bulk sample; 02-08-2012

<u>Solution</u>	<u>Starting pH</u>
pHenomenal (pH110)	12.0
Lactic Acid	2.0
Uric Acid	4.0

<u>Neutralization Test</u>	<u>Acid Volume</u>	<u>Product Volume</u>	<u>Final pH</u>
Lactic Acid neutralization	1 mL	21.75 mL	7.0
Uric Acid neutralization	1 mL	60 µL	7.0

Summary of Findings:

- The stronger acid solution, Lactic acid solution with a pH 2.0, was neutralized at approximately 1:22 ratio of acid to product.
- The weaker acid solution, Uric acid solution with a pH 4.0, was neutralized at approximately 1:0.06 ratio of acid to product.

Report#: 27600-R01v2 Analysis Date: 04-24-2012
Laboratory Results authorized by Sean P. Abbott, Ph.D., Analytical Director



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Analytical Laboratory Report
pH neutralization Testing
Bulk sample

Account Name:	Shannon Brown	Control ID#:	27600
Project/P.O.:	(none listed)	Date Received:	02-08-2012
Submitter:	Shannon Brown	Date Reported:	04-25-2012

Purpose:

To test the pH neutralization capacity of a product (pHenomenal, lot# pH110) against two acid solutions (lactic acid and uric acid).

pH Neutralization Testing Protocol:

1. Prepare Acid solutions.
 - 1.1. Lactic acid ($\text{CH}_2\text{CHOHCOOH}$): Prepare diluted solution from primary acid (liquid, 85%, Anachemia Science).
 - 1.1.1. Mix 10 mL of primary acid with 100 mL distilled water.
 - 1.1.2. pH Measurement of diluted acid solution: pH 2.0 (measured in duplicate with Hanna Instruments pH meter and ColorpHast pH indicator strips).
 - 1.2. Uric acid ($\text{C}_5\text{H}_4\text{N}_4\text{O}_3$): Prepare diluted solution from primary acid (crystalline powder, 99%, Anachemia Science).
 - 1.2.1. Mix 1.0 g of primary acid with 25 mL distilled water.
 - 1.2.2. pH Measurement of diluted acid solution: pH 4.0 (measured in duplicate with Hanna Instruments pH meter and ColorpHast pH indicator strips).
2. Alkaline Product: pHenomenal, lot # pH110, liquid concentrate.
 - 2.1.1. pH Measurement of product solution: pH 12.0 (measured in duplicate with Hanna Instruments pH meter and ColorpHast pH indicator strips).
3. Prepare pH neutralization series.
 - 3.1. Use 1 mL of prepared lactic acid solution in sterile test tubes and add alkaline product (phenomenal) in various increasing volumes until final pH tested is at 7.0 (neutral pH).
 - 3.2. Use 1 mL of prepared uric acid solution in sterile test tubes and add alkaline product (phenomenal) in various increasing volumes until final pH tested is at 7.0 (neutral pH).
 - 3.3. pH Measurement of neutralized solutions measured in duplicate with Hanna Instruments pH meter and ColorpHast pH indicator strips.
4. Record pH, volumes added and report.

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