CHEM 101 Laboratory 4

Lab Note 4

Procedure

In the experimental procedure, a stock iron nitrate solution was initially measured, and 5.0 ml aliquots of this solution were added to separate 25.00 mL volumetric flasks. Similarly, a stock salicylic acid solution was measured, and 1.00 mL, 5.00 mL, and 10.00 mL aliquots (SA Solution) were transferred into three different 25.00 mL volumetric flasks, respectively. Distilled water was added to each flask to reach the mark, creating standard solutions #1, #2, and #3 with known concentrations of salicylic acid. The color of each solution was noted. Additionally, a blank solution was prepared by adding distilled water to a 25.00 mL volumetric flask containing only the iron solution. This experiment allowed the creation of three distinct standard solutions with specified concentrations of salicylic acid by diluting the stock solution in volumetric flasks and noting the resulting colors of the solutions.

Absorption Data

<table>
<tr><th></th><th>Blank (mL)</th><th>Standard #1 (mL)</th><th>Standard #2 (mL)</th><th>Standard #3 (mL)</th><th>Unknown (mL)</th></tr>
<tr><td>Stock Iron Nitrate Solution</td><td>5.0</td><td>5.0</td><td>5.0</td><td>5.0</td><td>5.0</td></tr>
<tr><td>Stock Salicylic Acid Solution</td><td>N/A</td><td>1.00</td><td>5.00</td><td>10.00</td><td>N/A</td></tr>
<tr><td>Acne Cleaner</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>0.30</td></tr>
<tr><td rowspan="3">Absorbance</td><td rowspan="2">0.000</td><td rowspan="3">0.190</td><td rowspan="3">0.751</td><td rowspan="2">1.321</td><td>0.511</td></tr>
<tr><td rowspan="2">0.509</td></tr>
<tr><td>0.002</td><td>1.319</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>0.506</td></tr>
</table>

SA Information

The provided stock solution of **salicylic acid** is a chemical substance with a molarity of 0.002916 M. Salicylic acid is an organic compound known for its diverse applications, ranging from pharmaceuticals to skincare products due to its anti-inflammatory and exfoliating properties.

Iron Solution Information

The stock iron solution provided is 0.010 M **$Fe(NO_3)_3 \cdot 9H_2O$**, marked as an irritant. This solution is commonly used in spectrophotometric determination, a technique enabling precise analysis of salicylic acid concentrations.

Cleaner Information

SA Percent:	0.5%
Product Name:	Clean&Clear Deep Cleaning Astregent
Address:	Markham, Canada L3R 5L2