


Heidelberg University Student Chapter

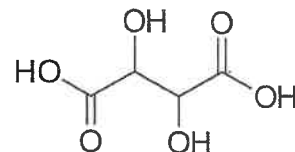
Tiffin, OH

Invisible Ink

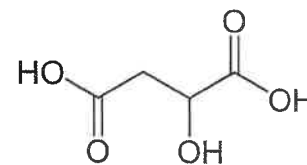
6 C 12.011	2 He 4.003	98.9062 M 72
71 Lu 174.967		
5 B 10.81		

Background Information

- Baking soda, or sodium bicarbonate (NaHCO_3), is a common household item typically used for cleaning, personal hygiene, and as a deodorizer.
- Grape juice is high in tartaric acid ($\text{C}_4\text{H}_6\text{O}_6$) as well as malic acid ($\text{C}_4\text{H}_6\text{O}_5$) which makes a solution acidic once exposed to the juice.



Tartaric Acid



Malic Acid

- Grape juice is known to act as a pH indicator. In this experiment, it turns a dark green color when exposed to NaHCO_3 .

Materials

- Safety Goggles
- Gloves
- Grape Juice Concentrate
- Baking Soda
- Paper (thicker the better)
- Q-tips or brushes
- Cup for mixing baking soda
- Water

Procedure

- Mix $\frac{1}{4}$ cup of water with a $\frac{1}{4}$ cup of baking soda. Wet a Q-tip/brush with the solution and write a message on the paper.
- Let the paper dry.
- With a second Q-tip/brush, coat the paper with grape juice concentrate.
- The letters will change color to reveal your message.