

STANDARD SOLUTIONS AND ALKALINITY

This is an accuracy test. The procedure must be developed with the most care and accuracy.

Standard solutions:

The following solutions of sodium carbonate ($\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$, M.W. = 286 gr/mol) were prepared in the laboratory.

1. 100 mL with 21.6 mg of $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$
2. 100 mL with 32.4 mg of $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$

These solutions must have a 0.1% error to be accepted as std. solutions.

Answer the following questions in a report format:

- a) Which is the concentration in mg/L for the $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$?
 1. 216 mg/L
 2. 324 mg/L
- b) Which is the concentration in mg/L for Na_2CO_3 only?
 1. 80 mg/L
 2. 120 mg/L

Measure alkalinity, compare the results obtained, and answer the following questions in a report format:

- a) What is the normality of the solution?
 1. 0.0034
 2. 0.004
- b) What is the concentration in mg/L of the solution as CaCO_3 ?
 1. 170mg/L
 2. 200mg/L
- c) What is the concentration in mg/L of the solution as $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$?
 1. 480 mg/L
 2. 570 mg/L

Compare the results obtained in the titrations with the standard concentration. Can these solutions be accepted as standard solutions?

Answer: NO