What would freeze faster high pH water or low pH water or would they freeze at the same rate?

Testable Question and Variables

Testable Question:Would high pH water or low pH water freeze faster or would they freeze at the same rate?

Independent Variable:High Ph level water

Control:Low Ph level water

Dependent Variable:Time for water to freeze

Constant Variables:Freezer,Temperature in Freezer, and ice mold type.

Hypothesis

My Hypothesis for this experiment is when I freeze the high pH level water the water will freeze faster than low pH water.

I think this because I learned from my research that when freezing low pH water it has lower freezing point than high pH water. By freezing high pH I should see it freeze faster than low pH water. If the water with higher pH has a higher freezing point than low pH water it should freeze faster.

Materials

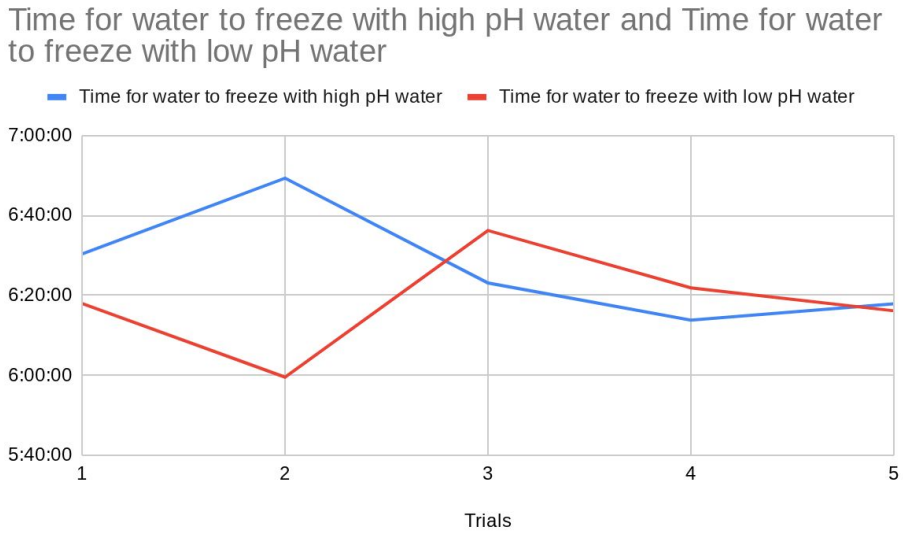
1. Alkaline water(high pH water)
2. Tap water(low pH water)
3. Freezer
4. Timer
5. Ice cube molds
6. Temperature thermometer(to make sure both are same temperature before putting in freezer)
7. Computer to type data in Data box

Procedure

1. Put low pH water in ice cube mold
2. Put high pH water in ice cube molds
3. Wait to make sure both waters in ice cube molds are the same temperature
4. Put ice cube molds in freezer
5. Start a timer
6. Check on the ice every 10 minutes
7. Take data and type in data box

Data

Would high pH water or low pH water freeze faster or would they freeze at the same rate?		
Trials	Time for water to freeze with high pH water	Time for water to freeze with low pH water
1	6:30:21	6:17:56
2	6:49:18	5:59:32
3	6:23:05	6:36:13
4	6:13:49	6:21:53
5	6:17:53	6:16:08



Data Results

The data show the average time for high pH water to freeze was 6:27:05 .The average time for low pH water to freeze was 6:18:20 .The difference was that low pH water froze 8 minutes and 45 seconds faster.

Conclusion

My hypothesis was not supported by my data. This is because my low pH water froze faster than my high pH water. According to my results,there was a 8 minute 45 second difference which is significant. This does not confirm my research that said there would not be a significant difference and that the water would freeze at the same rate.

Limitations

A limitation for my experiment was that I couldn’t get really high pH water or really low pH water and I couldn’t do much trials.I didn't have time to get the low pH water I wanted which was rain because I wasn’t at home when it rained to collect it and my freezer couldn’t fit more water which could have influenced my data. If I were to do this experiment again I would have done more trials and got significant different pH water.

The End
Thank you for your time!