

Glow stick essay sample

[Environment](#), [Water](#)



The light from a glow stick will extinguish more quickly at higher temperatures because temperature affects the rate of the chemical reaction.

Question:

Will a glow stick extinguish more quickly while in a higher temperature?

Purpose: To determine if a glow stick will die out quicker in a cold temperature or a warm temperature.

Materials:

-3 small jars/cups

-water

-3 glow sticks

-3 thermometers

-ice water

-hot water

procedure:

1. The independent variable is the temperature of the water in the cup which is around 25 degrees Celsius. The dependent variable is the length of time the glow sticks will glow. This is determined by using my stopwatch to measure the time and a thermometer that checks the heat level. 2. Measure out the same amount of water into all three cups. Label the cups: Hot, Cold, Room temp. 3. The cold water cup should be at 5-15 degrees Celsius. The hot cup should be around 35-45 degrees Celsius. The room temperature cup should be around 25 degrees Celsius. 4. Pour hot water into a cup, pour cold

water into a cup, and pour room temperature water into the other cup. Place a thermometer and cracked glow stick in each cup. 5. Start the stopwatch, also turn the lights off.

6. Record the average time taken for the 3 glow sticks in each cup to stop glowing.

Observation:

The observations I made were that, the glow stick in the warmer water glowed brighter but it also extinguished or died off a lot faster. The glow stick in the cold water was not as bright as the stick in the hot water, but it did produce light the longest. I then learned, that my hypothesis that light from a glow stick will die out faster while exposed at higher temperatures was correct!

Results/ Analysis:

Graph:

Table:

Water Temp. 5°C-15°C 25°C 35°C-45°C

Glow time (in minutes) 27 6 9 3 4 1

Conclusion:

One belief about glow stick is usually that if you put them into the freezer they will last longer, I tested this theory to then find out, my hypothesis that light from a glow stick will extinguish faster at high temperatures was correct. The project was to determine how temperature can affect the length

of time a glow stick will remain lit. The experiment was done by placing three glow sticks into three different temperatures while checking how long it would take for three sticks to fade their glow. In the end, the hypothesis mainly states that putting a glow stick into the freezer will actually help maintain the chemiluminescence (glowing reaction in the glow stick) last longer.