Diffusion and Osmosis Worksheet

Name(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The osmotic content of the blood of a healthy individual should be about the same as a NaCl solution between 275 and 325 mM.  Do you think the osmotic content of a potato will be more than, less than, or about the same as blood?

After weighing your potato slices, complete the table. [NaCl] is the concentration of salt. % Change in mass is 100 x (Change in mass) $÷$ (Initial mass).

Initial time: \_\_\_\_\_\_\_\_\_\_ Final time: \_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Slice | [NaCl] | Initial mass (g) | Final mass (g) | Change in mass (g)(final – initial) | % Change in mass |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |

Use the graph paper on the next page to plot *% Change in mass* as a function of solution concentration, [NaCl]. Plot [NaCl] on the horizontal axis and *% Change in mass* on the vertical axis.

Use the graph to estimate the isotonic concentration of your plant tissue sample. This is the solution concentration where the *% Change in mass* is zero.