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# Phosphate Buffer

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Neillier Junior<sup>1</sup>

<sup>1</sup>University of Manitoba



**Neillier Junior**

University of Manitoba, Universidade Federal de Viçosa



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**Protocol status:** Working

**We use this protocol and it's working**

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## Abstract

A buffer solution has the function of resisting changes in pH even when adding powerful acids or bases. However, in the physiological environment the buffered system also provides cofactors for enzymatic reactions, critical salts and even essential nutrients for cells and tissues. Therefore, when trying to reproduce biological conditions in vitro, we must make the appropriate choice of the buffer. After all, it will provide the appropriate medium in which reactions will occur.

## Materials

- Deionized Water
- pH Meter (sensitive)
- Sodium Phosphate Monobasic
- Sodium Phosphate Dibasic

## Safety warnings

 Wear personal protective equipment: gloves, lab coat and mask.

## Before start



Organize your workspace.

Make sure all solutions and equipment are available.

## Phosphate Buffer

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### Note

pH range:  5.8 to  8.0

- (a) 0.1 M Sodium phosphate monobasic; 13.8 g L<sup>-1</sup> (monohydrate, M.W. 138.0 g mol<sup>-1</sup>)
- (b) 0.1 M Sodium phosphate dibasic; 26.8 g L<sup>-1</sup> (heptahydrate, M.W. 268.0 g mol<sup>-1</sup>)

Mix sodium phosphate monobasic and dibasic solutions in the proportions indicated.

<b>mL of Sodium phosphate, Monobasic</b>	92.0	81.5	73.5	62.5	51.0	39.0	28.0	19.0	13.0	8.5	5.3
<b>mL of Sodium phosphate, Dibasic</b>	8.0	18.5	26.5	37.5	49.0	61.0	72.0	81.0	87.0	91.5	94.7
<b>pH</b>	5.8	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0

2 Adjust the final volume to  200 mL with deionized water.

3 Adjust the final pH using a sensitive pH meter.