# Phosphate Buffer Solution

**M2184I**

## Intended Use:

Recommended for preparation of dilution and blanks. The composition and performance criteria of this medium is as per the specifications laid down in ISO 8199:-1998 (E).

## Composition**

**ISO specification - Phosphate Buffer Solution**

| Ingredients | Mg / L |
|---|---|
| Potassium dihydrogen orthophosphate | 42.50 |
| Magnesium chloride ($Mgcl_2$) | 190.00 |
| Final pH ( after sterilization) | 7.2±0.5 |

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**Formula adjusted, standardized to suit performance parameters

## Directions

Suspend 232.50 mg in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121±1°C) for 15 minutes.

## Principle And Interpretation

Phosphate Buffer Solution is used for preparing dilutions, blanks for the examination of waters, dairy products, foods, and other specimens. The solution also provides potassium and magnesium ions.The composition is also as per ISO Committee (1).

## Type of specimen

Water samples

## Specimen Collection and Handling

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (1,2).

**Preparation of test sample -** ISO 5667-2, ISO 5667-3: The sample should be mixed thoroughly by vigorous agitation to achieve uniform distribution of microorganisms and, depending on the nature of the water and the bacterial content anticipated, any dilutions necessary made at this stage. Prepare tenfold dilutions of water samples as per ISO 6887.

After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations :

1. Further recovery on solid media is required for identification of species.
2. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

**Appearance**

Cream to yellow homogeneous free flowing powder

**Colour and Clarity of prepared medium**

Colourless to light yellow coloured clear solution

**Reaction**
Reaction of 0.023% w/v aqueous solution at 25°C. pH : 7.2±0.5

**pH**
6.7-7.70

**Cultural Response**
Cultural characteristics observed after an incubation at 20-25°C for 45 mins to 1hour. Recovery is considered on TSA

| Organism | Inoculum (CFU) | Growth |
|---|---|---|
| *Escherichia coli* ATCC 25922 (00013)* | 50-100 | ±30% of the original count |
| *Escherichia coli* ATCC 8739 (00012*) | 50-100 | ±30% of the original count |
| *Staphylococcus aureus* subsp. *aureus* ATCC 25923 (00034*) | 50-100 | ±30% of the original count |

Key : (*)Corresponding WDCM numbers.

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

## Reference

1.Water quality - General guide to the enumeration of microorganisms by culture, International organization for standardization (ISO): 8199:1988 (E).
2.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition
3.Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L.,Richter, S.S and Warnock., D.W. (2015), Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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