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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

Phenol Red Broth Base

Principle

Phenol red broth base is formulated by Vera (1950) is used for to study carbohydrate fermentation reaction. It is composed of proteose peptone, meat extract, sodium chloride and phenol red. Peptone and meat extract provide carbon, nitrogen sources and essential growth factors required for growth of microorganisms. The sodium chloride maintains osmatic equilibrium of the medium. Phenol red is pH indicator dye. The medium contains all the necessary nutrients required for the growth of microorganism, except carbohydrate. The desired carbohydrate is added into the medium to carbohydrate fermentation reaction. If the organism has ability to ferment added carbohydrate, with the acid or acid and gas production. Due to the acid production the color of medium changes to yellow. Whereas production of mixed acid, notably butyric acid result in
pungent or foul smell. The gas production is detected by gas trapped in Durham's tubes.

Use: For determination of fermentation reactions of pure cultures of microorganisms.

Contents*

Ingredients	Gram/Liter
Proteose peptone	10.000
Meat Extract#	1.000
Sodium Chloride	5.000
Phenol red	0.018
pH at 25˚C	7.4 ±0.2

*** Formula adjusted for optimum performance and parameters**
 # Equivalent to Beef Extract

Directions: Dissolved 16.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely and distribute aseptically in test tubes containing inverted Durham's tubes. Sterilize by autoclaving at 15 lbs. pressure (121°C) for 15 min, cool it to 42-45 °C. Aseptically add filter sterilized or autoclave sterilized carbohydrate solution to sterile basal medium. Mix well and inoculate test sample aseptically.

Specimens types analyzed

Pure culture of microorganisms etc.

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Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	**Light Beige to pink color free flowing, homogeneous powder**
Reaction of 1.6% solution	**7.4 ±0.2 at 25 ˚C**
pH	**7.20-7.60**
Color and clarity of ready medium	**red color, clear slightly opalescent solution**
Growth Promotion properties	**Best at ≤ 100 CFU at 32-37 ºC for 18-72 h**
Indicative properties	**Optimum at ≤ 100 CFU at 32-37 ºC for 18-48 h**
Negative control	**Performed using sterile distilled water**

Different Microbial Response: Cultural characteristics observed after incubation at 33-37°C for 18-24 hours. (Inoculum 50-100 CFU)

Organism	ATCC	Growth	w/o carbohydrate	with dextrose
Salmonella typhi	**14028**	**Luxurious**	**Acid – Negative Gas - Negative**	**Acid – Positive Gas - Negative**
Escherichia coli	**8739**	**Luxurious**	**Acid – Negative Gas - Negative**	**Acid – Positive Gas - Positive**

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Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. **American Public Health Association, (1978) Standard Methods for the Examination of Dairy Products, 14th Ed., Washington**
2. **D.C Difco Manual (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.**
3. **Monk, J. D., R. S. Clavero, L. R. Beuchat, M. P. Doyle, and R. E. Brackett. (1994). Irradiation inactivation of Listeria monocytogenes and Staphylococcus aureus in low-and high-fat, frozen and refrigerated ground beef. J. Food Prot. 57:969-974.**
4. **Wehr H. M. and Frank J. H., (2004), Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.**
5. **Vera, H.D. 1950. Relation of peptones and other culture media ingredients to accuracy of fermentation tests. Am. J. Public Health, 40:1267-1272.**

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