

Technical Information

PA MiVeg Broth

Product Code : VM2186

Application:- PA MiVeg Broth is used for the detection of coliform bacteria in treated water from treatment plants or distribution systems.

Composition

Ingredients	Gms / Litre
MiVeg peptone	5.0
MiVeg hydrolysate No. 1	9.83
MiVeg extract	3.0
Lactose	7.46
Sodium chloride	2.46
Dipotassium phosphate	1.35
Monopotassium phosphate	1.35
Sodium lauryl sulphate	0.05
Bromo cresol purple	0.0085
Final pH (at 25°C)	6.8 ± 0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

PA MiVeg Broth Base is prepared by using vegetable peptones in place of animal based peptones thereby making the medium BSE/TSE risks free. A simple procedure was proposed by Weiss and Hunter for the bacteriological examination of treated water that should be free of polluting organisms (1). Later on the PA (Presence Absence) test was developed as a simplified version of the test based on the principle that coliforms and other bacterial indicators of pollution should be absent in 100 ml samples of treated water (2). Other aspects of PA test were studied by Clark et al (3). PA Broth has been included as a tentative standard in the Standard Methods for the Examination of Water and Wastewater (4) justified on the theory that a 100 ml sample of drinking water should be free of coliforms. PA MiVeg Broth is the modification of this medium by utilizing vegetable peptones and serves the same purpose.

MiVeg peptone, MiVeg extract, MiVeg hydrolysate No. 1 supplies all the essential growth nutrients required for the coliforms metabolism. Lactose serves as the fermentable carbohydrate and/or energy source. Acid produced by Lactose-fermenters is identified by a colour change from purple to yellow. Dibasic and monobasic potassium salt phosphates provide buffering action while sodium lauryl sulphate inhibits many organisms other than coliforms. Bromocresol purple is the pH indicator which turns yellow at acidic pH.

Methodology

Suspend 30.5 grams of powder media in 1000 ml distilled water or if desired suspend 91.5 grams in 1000ml distilled water to prepare a triple strength medium. Dispense 50 ml volumes into screw capped tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 12 minutes.

Quality Control

Physical Appearance

Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Purple coloured, clear to very slightly opalescent solution without any precipitate.

Reaction

Reaction of 3.05% w/v aqueous solution is pH 6.8 \pm 0.2 at 25°C.

pH Range

6.6 - 7.0

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Colour of medium
<i>Enterobacter aerogenes</i> (13078)	10 ² -10 ³	good-luxuriant	light yellow
<i>Enterococcus faecalis</i> (29212)	10 ² -10 ³	inhibited	—
<i>Escherichia coli</i> (25922)	10 ² -10 ³	good-luxuriant	yellow
<i>Klebsiella pneumoniae</i> (13883)	10 ² -10 ³	good-luxuriant	yellow
<i>Salmonella</i> serotype Typhimurium (14028)	10 ² -10 ³	good-luxuriant	no change (purple)

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 day.

Further Reading

1. Weiss and Hunter, 1939, J. Am. Water Works Assoc., 31 : 707.
2. Clark, 1969, Can. J. Microbiol., 5 : 771.
3. Clark, Burger and Sabatinos, 1982, Can. J. Microbiol., 28 : 1002.
4. Earon A. D., Clesceri L.S. and Greenberg A.E., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed, APHA, Washington DC.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents. Do not use the products if it fails to meet specifications for identity and performance parameters.