PA HiVeg™ Broth MV1186

PA HiVeg Broth is used for the detection of coliform bacteria in water from treatment plants or distribution systems.

Composition ** :

Ingredients	Grams/Litre
HiVeg peptone	5.0
HiVeg hydrolysate No. 1	9.83
HiVeg 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.

Directions :

Suspend 30.5 grams in 1000 ml distilled water or if desired suspend 91.5 grams in 1000 ml 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.

Principle and Interpretation :

This medium is prepared by completely replacing animal based peptones with vegetable peptones which makes the medium free of BSE/TSE risks. 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 not be found 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 not contain any coliforms. PA HiVeg Broth is the modification of this medium by using vegetable peptones and serves the same purpose.
The medium contains HiVeg peptone, HiVeg extract, HiVeg hydrolysate No. 1 which supply nitrogenous growth factors and trace ingredients to the coliforms. Lactose serves as the fermentable carbohydrate and /or energy source for bacterial metabolism. Lactose-fermenting organisms form acid which is identified by the pH indicator bromocresol purple as 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. Bromo cresol purple is the pH indicator which turns yellow at acidic pH.

Product Profile :

Vegetable based (Code MV)◉	Animal based (Code M)
MV1186 HiVeg peptone HiVeg hydrolysate No. 1 HiVeg extract	**M1186** Peptic digest of animal tissue Tryptose Beef extract

Recommended for	:	Detection of coliform bacteria in water from treatment plants or distribution systems
Reconstitution	:	30.5 g/l
Quantity on preparation (500g)	:	16.39 L
pH (25°C)	:	6.8 ± 0.2
Supplement	:	None
Sterilization	:	121°C /12 minutes.

Storage : Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

PA test is only a presumptive test for the presence of coliforms. Confirmation of these results must be achieved by using the medium like Brilliant Green HiVeg Broth (MV121) etc.

Quality Control :

Appearance of powder
Light yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.
Colour and Clarity
Purple coloured, clear to very slightly opalescent solution without any precipitate.
Reaction
Reaction of 3.05% w/v aqueous solution is pH 6.8 ± 0.2 at 25°C.
Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18 - 24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Colour of medium
Enterobacter aerogenes(13048)	10^2-10^3	good-luxuriant	light yellow
Enterococcus faecalis (29212)	10^2-10^3	inhibited	-
Escherichia coli (25922)	10^2-10^3	good-luxuriant	yellow
Klebsiella pneumoniae (13883)	10^2-10^3	good-luxuriant	yellow
Salmonella serotype Typhimurium (14028)	10^2-10^3	good-luxuriant	no change (purple)

References :

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.

◉ Prepared from GMO free Vegetable proteins replacing Animal based peptones. Freedom from BSE/TSE worries.