

**Reinforced Clostridial HiVeg™ Agar / Broth**

**MV154 / MV443**

Reinforced Clostridial HiVeg Agar / Broth is used for the cultivation and enumeration of *Clostridium* species and other anaerobes.

**Composition\*\* :**

	MV154 Grams/Litre	MV443 Grams/Litre
<b>Ingredients</b>		
HiVeg hydrolysate	10.00	10.00
HiVeg extract	10.00	10.00
Yeast extract	3.00	3.00
Dextrose	5.00	5.00
Sodium chloride	5.00	5.00
Sodium acetate	3.00	3.00
Starch, soluble	1.00	1.00
L-Cysteine hydrochloride	0.50	0.50
Agar	13.50	0.50

Final pH (at 25°C) 6.8 ± 0.2

\*\* Formula adjusted, standardized to suit performance parameters

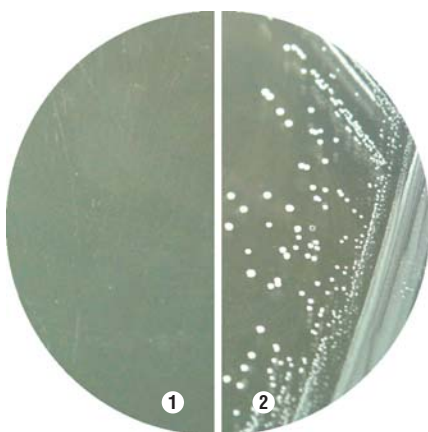
**Directions :**

Suspend 51 grams of MV154 or 38 grams of MV443 in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 10 lbs pressure (115°C) for 15 minutes.

**Principle and Interpretation :**

Reinforced Clostridial HiVeg Agar/ Broth is specially developed using HiVeg hydrolysate and HiVeg extract to avoid BSE/TSE risks associated with animal origin peptones and extracts. Reinforced Clostridial HiVeg Agar / Broth Media are the modifications of Reinforced Clostridial Media which are formulated by Hirsch and Grinsted (1). It can be used to initiate growth from small inocula and to obtain the highest viable count of *Clostridia*. This medium like the conventional medium can be used for diluting an inoculum of vegetative cells of *Clostridium perfringens* (2) as suggested by Barnes and Ingram or can be used in studies of spore forming anaerobes, especially *Clostridium butyricum* in cheese, also for the enumeration of *Clostridia* in tube dilution counts and for preparation of plates for isolation (3). Other spore forming anaerobes, *Streptococci* and *Lactobacilli* also grow in these media. These are enriched but nonselective media.

HiVeg hydrolysate, yeast extract, HiVeg extract and starch, provide all the necessary nutrients for the growth of



**MV154 Reinforced Clostridial HiVeg Agar**  
(Against dark background)

- 1. Control
- 2. *Bacteroides fragilis*

**Product Profile :**

Vegetable based (Code MV)©		Animal based (Code M)	
<b>MV154/MV443</b>		<b>M154/M443</b>	
HiVeg hydrolysate		Casein enzymic hydrolysate	
HiVeg extract		Beef extract	
<b>Recommended for</b>	: Cultivation and enumeration of <i>Clostridium</i> and other anaerobes.		
<b>Reconstitution</b>	: (MV154) : 51.0 g/l		
	: (MV443) : 38.0 g/l		
<b>Quantity on preparation (500g)</b>	: (MV154) : 9.80 L		
	: (MV443) : 13.15 L		
	<b>(100g)</b> : (MV154) : 1.96 L		
	: (MV443) : 2.63 L		
<b>pH (25°C)</b>	: 6.8 ± 0.2		
<b>Supplement</b>	: None		
<b>Sterilization</b>	: 115°C / 15 minutes.		
<b>Storage</b>	: Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.		

*Clostridia*. Dextrose is a fermentable carbohydrate in the medium while sodium chloride maintains osmotic equilibrium. Cystine hydrochloride is the reducing agent whereas sodium acetate acts as buffer. These media can be made selective by addition of 15-20 mg Polymyxin B per litre of media (1).

**Quality Control :**

**Appearance of Powder**

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

**Gelling**

Firm, comparable with 1.35% Agar gel of MV154.

**Colour and Clarity**

Light yellow coloured, clear to slightly opalescent gel forms in petri plates, clear solution in tubes.

**Reaction**

Reaction of 5.1% w/v of MV154 or 3.8% w/v of MV443 aqueous solution is pH 6.8 ± 0.2 at 25°C.

**Cultural Response**

Cultural characteristics observed after an incubation at 35-37°C for 40-48 hours, in an anaerobic atmosphere.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery
<i>Bacteroides fragilis</i> (23745)	10 <sup>2</sup> -10 <sup>3</sup>	good to luxuriant	>70%
<i>Bacteroides vulgatus</i> (8482)	10 <sup>2</sup> -10 <sup>3</sup>	good to luxuriant	>70%
<i>Clostridium butyricum</i> (9690)	10 <sup>2</sup> -10 <sup>3</sup>	good to luxuriant	>70%
<i>Clostridium perfringens</i> (13124)	10 <sup>2</sup> -10 <sup>3</sup>	good to luxuriant	>70%

**References :**

- 1. Hirsch and Grinsted, 1954, J. Dairy Res., 21:101.
- 2. Barnes and Ingram, 1956, J. Appl. Bact., 19:117.
- 3. Lewis and Angelotti (Eds.), 1964, Examination of Foods for Enteropathogenic and Indicator Bacteria, Dept. of HEW, PHS Publication, 1142, Washington.