

## TM 1319-WILLIS AND HOBBS' MEDIUM BASE (IS : 5887 (Part 4) : 1999)

### INTENDED USE

For isolation and identification of *Clostridium* from foods.

### PRODUCT SUMMARY AND EXPLANATION

Wills and Hobbs' Medium Base is recommended for the isolation & identification of *Clostridium* from foods. *Clostridium* spp. has the ability to produce gastrointestinal tract-active toxins that are capable of causing foodborne diseases. Their heat resistant property allows the spores to survive incomplete cooking thus leading to food poisoning. Therefore, it becomes very important for these pathogens to be detected and isolated before the consumption of food. This medium is formulated by Willis and Hobbs and is used for the identification of *C.perfringens* on the basis of lecithinase reaction in egg yolk and lactose fermentation. This medium is prepared in accordance with Indian Standard under the specifications IS: 5887 (Part-IV) 1976.

### COMPOSITION

Ingredients	Gms / Ltr
Lactose	12.000
Agar	10.000
Peptic digest of animal tissue	10.000
Meat extract	10.000
Sodium chloride	5.000
Neutral red	0.032

### PRINCIPLE

The medium contains Meat extract and peptic digest of animal tissue serves as a nitrogen source and other growth factors. Lactose is the energy and the carbon source. Sodium chloride maintains the osmotic balance. Neutral red is the pH indicator. Species of *Clostridium* like *C.perfringens* and *C.botulinum* produce an opalescent zone around the colony in egg yolk containing media, signifying lipase activity.

### INSTRUCTION FOR USE

- Dissolve 47.03 grams in 1000ml distilled water.
- Gently heat to boiling with swirling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
- Cool to 45 – 50°C and aseptically add 30.00 ml of Egg Yolk Emulsion (TS 002), 120 ml Sterile Skimmed Milk and rehydrated contents of 2 vials of Willis And Hobbs' Supplement (TS 098).
- Mix well and pour into sterile Petri plates.

### QUALITY CONTROL SPECIFICATIONS

<b>Appearance of Dehydrated powder</b>	: Pale yellow to pink, homogeneous free flowing powder
<b>Appearance of Prepared Medium</b>	
Basal medium	: Red colored, clear to slightly opalescent gel
After addition of sterile Egg Yolk Emulsion & sterile Skim milk solution	: Pinkish red coloured, opaque gel
<b>pH (at 25°C)</b>	: 7.0± 0.2



### INTERPRETATION

Cultural characteristics observed when incubated anaerobically after an incubation with added Egg yolk Emulsion (TS 002), 120 ml Sterile Skimmed Milk and rehydrated contents of 2 vials of Willis And Hobb`S Supplement (TS 098). Recovery rate is considered 100% for bacteria growth on Soya Agar.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Lecithinase	Incubation Temperature	Incubation Period
<i>Clostridium botulinum</i>	25763	50-100	Luxuriant	>=50%	Positive reaction, opaque zone around the colony	35-37°C	18-48 Hours
<i>Clostridium perfringens</i>	12919	50-100	Luxuriant	>=50%	Positive reaction, opaque zone around the colony	35-37°C	18-48 Hours

### PACKAGING

In 500 gm packaging size.

### STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

**Product Deterioration:** Do not use powder if they show evidence of microbial contamination, discoloration, drying, or other signs of deterioration.

### DISPOSAL

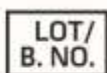
After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

### REFERENCES

1. Bureau of Indian Standards (BIS), 1976, IS: 5887 (Part IV).
2. Doyle, Michael, Beuchat, Larry and Montville Thomas, Food Microbiology, Fundamentals and Frontiers, ASM Press, Washington D.C.
3. Willis A. T., Hobbs G., 1959, Journal of Pathology and Bacteriology, Vol. 77, 511-521.
4. McClung L. S. and Toabe R., 1947, J. Bacteriol., 53:139.



Quantity



Lot / Batch Number



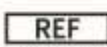
Temperature Unit



Best Before



QR Code



Catalogue No.



Consults Instructions for use :



Manufacturer

**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*For Lab Use Only**

Revision: 05<sup>th</sup> Oct. 2019

