

## Technical Information

### Lactose Peptone Broth

**Product Code: DM 2389**

**Application:** - Lactose Peptone Broth is used for detection of coliform organisms in water.

### Composition\*\*

| Ingredients                    | Gms / Litre |
|--------------------------------|-------------|
| Casein enzymic hydrolysate     | 17.000      |
| Papaic digest of soyabean meal | 3.000       |
| Lactose                        | 10.000      |
| Sodium chloride                | 5.000       |
| Bromocresol purple             | 0.020       |
| Final pH ( at 25°C)            | 7.4±0.2     |

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

### Principle & Interpretation

Lactose Peptone Broth was originally described in German Standard Methods and German Drinking Water Regulations (2) as a non-selective enrichment and detection medium for *Escherichia coli* and other coliforms in water specimens. German standards suggest the use of MPN technique with 0.1, 1.0 and 10 ml of sample and an incubation at  $36 \pm 1^\circ\text{C}$  for  $44 \pm 4$  hours. Depending upon the sample volume the medium can be either used as single strength or triple strength. Tubes that change to yellow and eventual gas production in Durhams tubes are considered positive.

Coliform bacteria are commonly used as bacterial indicator of sanitary quality of foods and water. Where it is claimed that drinking water has been processed for safety, the finding of such organism demonstrates a failure of the process. It is a valuable bacterial indicator for determining the extent of faecal contamination of recreational surface waters or drinking water (1). Coliforms are defined as rod-shaped gram-negative organisms, which ferment lactose with the production of acid and gas when incubated at  $35^\circ\text{C}$ .

Casein enzymic hydrolysate and papaic digest of soyabean meal supply all the essential nitrogenous growth nutrients. Lactose act as fermentable sugar. Lactose fermentation and gas production form the basis for the presumptive coliform identification. Sodium chloride maintains osmotic equilibrium. Bromocresol purple act as pH indicator of the medium, which turns yellow as a result of acid production from the fermentation of lactose.

### Methodology

Suspend 35.02 grams of dehydrated powder media (single strength) or 105.06 grams (triple strength) in 1000 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely. Dispense in tubes or bottles containing inverted Durhams tubes and sterilize by autoclaving at 15 lbs pressure ( $121^\circ\text{C}$ ) for 15 minutes.

### Quality Control

#### Appearance

Cream to greenish yellow homogeneous free flowing powder

#### Colour and Clarity

Purple coloured, clear solution without any precipitate

#### Reaction

Reaction of 3.5% w/v aqueous solution at  $25^\circ\text{C}$ . pH :  $7.4 \pm 0.2$



Dehydrated Culture Media  
Bases / Media Supplements

#### pH Range

7.20-7.60

#### Cultural Response

DM2389: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

| Organism   | Inoculum (CFU) | Growth    | Acid production                  | Gas Production    |
|--|----------------|-----------|----------------------------------|-------------------|
| <b>Cultural Response</b><br><i>Escherichia coli</i> ATCC 25922 | 50-100         | luxuriant | positive reaction, yellow colour | positive reaction |
| <i>Salmonella Typhimurium</i> ATCC 14028                       | 50-100         | luxuriant | negative reaction                | negative reaction |

## Storage and Shelf Life

**Dried Media:** Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

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

## Further Reading

1. Corry J. E. L., Curtis G. D. W. and Baird R. M., 1995, Culture Media for Food Microbiology. Vol. 34, Progress in Industrial Microbiology, Elsevier, Amsterdam
2. DIN Deutsches Institute f ü r Normung, 1991, e.V.: Deutsche Einheitsverfahren zur Wasser-, Abwasser-und Schlammunter suchung: Mikrobiologische Verfahren (Gruppe K), Nachwels von Escherichia coli und coliformen Keimen (K6). Reference Method DIN 38411.

## Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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