# TM 159 – LETHEEN BROTH, MODIFIED (as per FDA)

## INTENDED USE
For screening cosmetic products to check microbial contamination.

## PRODUCT SUMMARY AND EXPLANATION
In the early 40s, Weber and Black recommended the use of lecithin and polysorbates to neutralize the antimicrobial action of the quaternary ammonium compounds. In 1965, the methodology was accepted by AOAC for the antimicrobial assays and extended their use to all the cationic detergents. In 1978, the FDA incorporated it as pre-enrichment medium for every microbial examination of cosmetics.
Letheen Broth, Modified is prepared as per FDA for screening cosmetic products for microbial contamination. There are great chances of altering the chemical composition of cosmetics by the metabolism of organism s thereby spoiling and causing harm to the users. Direct colony counts and enrichment culturing are the methods of choice for isolating microorganisms from cosmetic products. The word Letheen represents a combination of lecithin and polysorbate (tween) 80.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Peptone** | 20.000 |
| **Tryptone** | 5.000 |
| **Beef extract** | 5.000 |
| **Yeast extract** | 2.000 |
| **Sodium chloride** | 5.000 |
| **Sodium bisulphite** | 0.100 |
| **Lecithin** | 0.700 |
| **Polysorbate 80** | 5.000 |

## PRINCIPLE
This medium consists of Peptone, tryptone, Beef extract and yeast extract which provide nitrogenous nutrients, carbon compounds, long chain amino acids and trace elements to the microorganisms. Incorporation of lecithin and polysorbate 80 to the medium enables the recovery of bacteria from materials containing residues of disinfectant compounds or preservatives used in cosmetics. Polysorbate 80 is added to nullify phenolic compounds, hexachlorophene, formalin and along with lecithin neutralizes ethyl alcohol. Lecithin also neutralizes quaternary ammonium compounds present in the cosmetics. Sodium chloride maintains the osmotic balance of the medium. Enrichment in this medium should be done for 7 days at 30-32°C and then subcultured on Letheen Agar, Modified and/or MacConkey Agar.

## INSTRUCTION FOR USE
- Dissolve 42.80 grams in 1000 ml distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense into tubes or flasks as desired and Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.

## QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : Cream to yellow homogeneous free flowing powder.
**Appearance of prepared medium** : Yellow coloured clear solution in tubes.
**pH (at 25°C)** : 7.0 ± 0.2

## INTERPRETATION

Cultural characteristics observed after incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|
| *Escherichia coli* | 25922 | 50-100 | Luxuriant | 35-37°C | 24-48 Hours |
| *Staphylococcus aureus subsp. aureus* | 25923 | 50-100 | Luxuriant | 35-37°C | 24-48 Hours |
| *Staphylococcus aureus subsp. aureus* | 6538 | 50-100 | Good-luxuriant | 35-37°C | 24-48 Hours |

## PACKAGING:

In pack size of 500 gm bottles.

## STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 2-8°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 if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

## DISPOSAL

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

## REFERENCES

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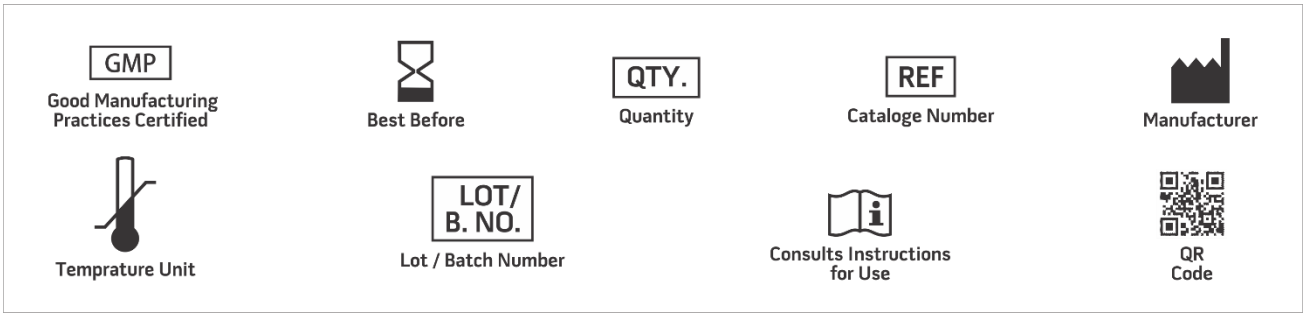


**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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