# m-Lauryl sulfate Agar

## Art. No. 01-524



## Specification

Solid medium for the isolation and enumeration of coliform organisms and *E. coli* from water by membrane filtration.

## Formula* in g/L

| | |
|---|---|
| Peptone | 39,00 |
| Yeast extract | 6,00 |
| Lactose | 30,00 |
| Sodium Lauryl sulfate | 1,00 |
| Phenol red | 0,20 |
| Agar | 15,00 |

Final pH 7,40 ± 0,2 at 25°C

* Adjusted and /or supplemented as required to meet performance criteria

## Directions

Suspend 91,2 g of powder in 1 L of distilled water and bring to the boil. Distribute into suitable containers and sterilize in the autoclave at 121°C for 15 minutes. **Please note: Overheating can cause the lactose to darken**.

## Description

MF-Laurylsulphate Agar is the solid version of the broth of the same name, and is successor to the Enrichment Teepol Broth formulated in 1976, after Teepol 610 disappeared off the market.

In liquid form this medium is recommended by the Dept. of Environment, Health & Social Security and the Public Health and Medical Service of the United Kingdom. It is recommended for the detection and enumeration of coliforms and *Escherichia coli* by the membrane-filtration technique without pre-enrichment. The solid version can be used in the same way as the absorbent pad with the broth.

The Lauryl sulfate acts as selective inhibitor of sporulating contaminants. At the formulated concentration the tension-active agent (Lauryl sulfate) has no effect over coliforms, and they grow quickly and abundantly from minute inocula.

The acid production from lactose is shown by the phenol red indicator turning from red to yellow. This change results in yellow colonies over a yellow zone in the medium.

## Technique

Coliform enumeration and *E. coli* enumeration must be done in separate volumes of sample. The volume to be filtered must be careful selected to obtain 10-100 colonies on the membrane.

Water samples once filtered through a sterile membrane are placed on the surface of the MF Lauryl sulfate agar and incubated. Burman (1976), recommended the following times and temperatures of incubation for non-chlorinated waters:

Coliforms: 4 h at 30°C followed by 14 h at 35°C

*Escherichia coli*: 4 h at 30°C followed by 14 h at 44°C

In chlorinated waters it is better to change the first incubation step to 6 h at 25°C. The 44°C incubation is more reliable if is carried out in a hermetically sealed container in a water bath with rigorous control of the temperature. The presumptive colonies growing at 44°C must be confirmed with the production of gas from lactose and production of indol at 44°C.

## References


- ATLAS R.M & L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press. London.
- BURMAN, N.P. (1976) Recent advances in Bacteriological Examination of Water, in Progress in Microbiological Techniques, edited by C.H. Collins. Butterworth. London.
- CORRY, J.E.L, G.D.W. CURTIS & R.M. BAIRD (2003) Handbook of Culture Media for Food Microbiology. Elsevier. Amsterdam.
- HOLDEN, W.S. (1970) Water Treatment and Examination. J & A Churchill. London.
- PHLS and DEPT. of ENVIRONMENT, HEALTH & SOCIAL SECURITY (1982) The Bacteriological Examination of Drinking Water Supplies. Report on Public Health and Medical Subjects No. 17. HMSO. London.


## Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4°C to 30°C and <60% RH).

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### Quality control

**Incubation temperature:** 35°C ± 2,0
**Incubation time:** 24 - 48 h
**Inoculum:** 10 - 100 CFU. Membrane filter Methods

| Microorganism | Growth | Remarks |
|---|---|---|
| *Enterococcus faecalis* ATCC 19433 | Inhibited | - |
| *Escherichia coli* ATCC 8739 | Productivity > 0.50 | Orange-Yellow media. Yellowish colonies L (+) |
| *Escherichia coli* ATCC 25922 | Productivity > 0.50 | Orange-Yellow media. Yellowish colonies L (+) |
| *Pseudomonas aeruginosa* ATCC 27853 | Good | Red media. Colourles colonies L (-) |
| *Salmonella typhimurium* ATCC 14028 | Productivity > 0.50 | Red media. Colourless colonies L (-) |
| *Salmonella abony* NCTC 6017 | Productivity > 0.50 | Red media. Colourless colonies L (-) |


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