# TMP 1858 - CHROMOGENIC COLIFORM AGAR PLATE

## INTENDED USE

For determination of coliform bacteria particularly Enterobacteriaceae on the basis of their ability to ferment lactose.

## PRODUCT SUMMARY AND EXPLANATION

Coliforms including *Escherichia coli* are used as primary indicators of faecal contamination in water and food industries. Their presence and enumeration in samples is used as an index of the presence of faecal matter and is indicative of the possible presence of enteric pathogens. Chromogenic Coliform Agar (CCA) is a fast, accurate, and efficient way to detect coliforms bacteria particularly Enterobacteriaceae during microbiological quality testing of water and food samples. *Escherichia coli* are the most common pathogen in urinary tract infections. This product incorporates the company's chromogenic galactoside that detects clinical levels of coliforms with high sensitivity.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Agar** | 10.00 |
| **Sodium Chloride** | 5.00 |
| **Disodium hydrogen phosphate** | 2.70 |
| **Sodium dihydrogen phosphate (2H2O)** | 2.20 |
| **Yeast extract** | 2.00 |
| **Enzymatic digest of casein** | 1.00 |
| **Sodium pyruvate** | 1.00 |
| **Sorbitol** | 1.00 |
| **Tryptophan** | 1.00 |
| **Salmon-β-D-galactoside** | 0.20 |
| **Sodium heptadecylsulphate (Tergitol 7)** | 0.15 |
| **X-glucuronide** | 0.10 |
| **Isopropyl 1-β-D- thiogalactopyranoside (IPTG)** | 0.10 |

## PRINCIPLE

This medium contains enzymatic digest of casein, yeast extract, sorbitol and sodium pyruvate as sources of carbon, nitrogen, fermentable carbohydrate and other essential growth nutrients for the growth of microorganisms. Disodium hydrogen phosphate and sodium dihydrogen phosphate are the buffering agents. Sodium chloride maintains the osmotic equilibrium in the medium. L- Tryptophan improves the indole reaction and gives improved differentiation between *Escherichia coli* and other coliforms. Tergitol- 7 inhibits gram positive bacteria. The two chromogens used; salmon-β-D-galactoside and X-glucuronide helps in differentiation of *Escherichia coli* and other coliforms on the basis of colony colour. The enzyme β-D-galactosidase cleaves salmon-β-D-galactoside, and gives a salmon to red colour to the coliform bacteria. *E. coli* have β-D galactosidase and β-D-glucuronidase enzymes to cleave both the chromogens, which give blue-violet colour to colonies. Expression of β-D galactosidase is strengthened in the presence of IPTG. Agar is a gelling agent.

## INSTRUCTION FOR USE

Either streak, inoculate or surface spread the test inoculum aseptically on the plate.

## QUALITY CONTROL SPECIFICATIONS

| | | |
|---|---|---|
| **Appearance** | : | Light yellow coloured, clear to slightly opalescent gel. |
| **Quantity of Medium** | : | 25ml of medium in 90mm plates. |
| **pH (at 25°C)** | : | 6.8 ± 0.2 |
| **Sterility Check** | : | Passes release criteria |

## INTERPRETATION

Cultural characteristics observed after incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Recovery | Colour of Colony | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|---|---|
| *Escherichia coli* | 25922 | 50-100 | Luxuriant | >=70% | Dark blue to violet | 35-37°C | 18-24 Hours |
| **Klebsiella aerogenes* | 13048 | 50-100 | Luxuriant | >=70% | Pink to red | 35-37°C | 18-24 Hours |
| *Citrobacter freundii* | 43864 | 50-100 | Luxuriant | >=70% | Pink to red | 35-37°C | 18-24 Hours |
| *Enterococcus faecalis* | 19433 | ≥1000 | Inhibited | 0% | - | 35-37°C | 18-24 Hours |
| *Salmonella* Enteridis | 13076 | 50-100 | Luxuriant | >=70% | Colourless | 35-37°C | 18-24 Hours |

*Formerly known as *Enterobacter aerogenes*

## PACKAGING:

Double layered packing containing 5 No. of plates with one silica gel desiccant bag packed inside it.

## STORAGE

On receipt, store the plates at 2–8 °C. Avoid freezing and overheating. Do not open until ready to use. Prepared plates stored in their original sleeve wrapping until just prior to use may be inoculated up to the expiration date and incubated for recommended incubation times. Allow the medium to warm to room temperature before inoculation.

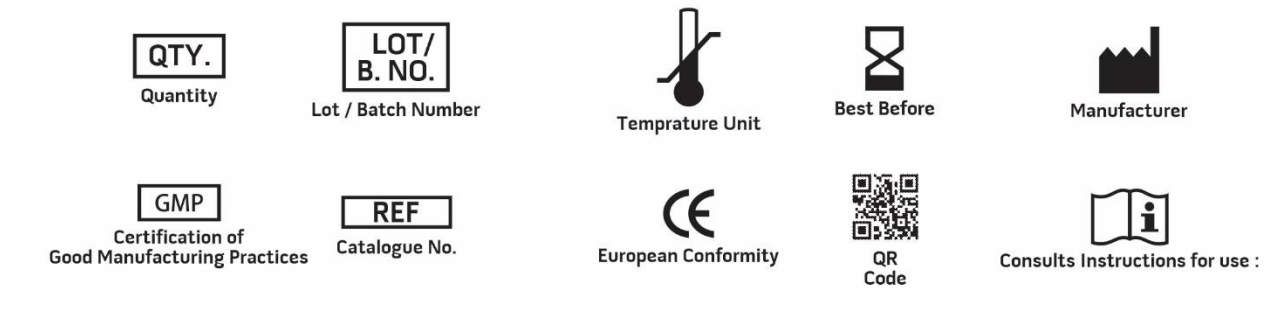
**Product Deterioration:** Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

## DISPOSAL

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

## REFERENCES

1. ISO 9308-1/2014. Water quality — Enumeration of Escherichia coli and coliform bacteria —Part 1: Membrane filtration method for waters with low bacterial background flora.
2. Frampton, E.W., Restaino, L. and Blaszko, N. 1988. J. Food Prot. 51: 402-404.
3. Kilian, M. and Bulow, P. 1979. Acta. Pathol. Microbiol. Scand. (Section B) 87: 271-276.



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

***For Lab Use Only**

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