

TECHNICAL DATA SHEET

Article No. 9293

Tergitol® 7-Lactose-TTC Agar, membrane filtration plates

SPECIFICATION

Membrane filtration plates, ready-to-use. Medium for the detection of coliforms by membrane filtration in water analyses according to ISO 9308-1:2000.

Color: Green
pH: 7.2 ± 0.1 at 25 °C

COMPOSITION IN G/L

Meat peptone	10.00
Meat extract	5.00
Lactose	20.00
Yeast extract	6.00
Bromothymol blue	0.05
Tergitol® 7	0.10
TTC sterile solution 1%	2.50
Agar	15.00

PACKAGING DETAILS

9293-30PLATES

30 prepared plates for filtration purposes 55 mm

Content: 9 ± 1 ml

Packaging unit: 1 box with 6 plastic bags with 5 plates of 55 mm/ bag.

GUIDELINES

Description:

This medium is formulated for the presumptive identification of coliforms in drinking water, by membrane filtration according to ISO 9308 -1:2000.



Technique:

While using the membrane filter technique for the presumptive identification of coliforms in water, it should be kept in mind that the minimum volume to be filtered depends on the type of water being tested. If necessary dilute with sterile phosphate buffer in order to obtain the number of colonies on the membrane appropriate for counting.

For every water sample two volumes must be filtered over two different membranes and incubated on Chapman TTC Agar at 35 °C and 44 °C respectively.

After 48 hours typical colonies have the appearance as follow:

- *Escherichia coli*, *Citrobacter spp.*: Yellow with a centred orange nucleus under the membrane filter (MF).
- *Klebsiella spp.*: Brick red or yellow without a nucleus. The medium under the (MF) is yellow.
- *Enterobacter spp.*: Dark yellow or brick red with an orange nucleus. The medium is also yellow.
- Non lactose-fermenters: Violet or indigo colonies. The medium turns blue.

Most coliforms cannot grow on this medium when incubated at 44 °C, except *E. coli* which forms a colony with a characteristic appearance.

Results are always expressed per 100 mL sample including any applied dilutions. Estimation is done by taking typical colonies which have grown at 35 °C as faecal coliforms, together with those grown at 44 °C as *E. coli*. Nevertheless, according to legislation and despite the medium's selectivity, results can only be considered as presumptive and all coliform colonies have to be confirmed by following the criteria below:

Typical appearance in EMB Agar or Endo Agar Base and characteristic reactions in Kligler Iron Agar.

For the confirmation of faecal *E. coli*, the following characteristics are used for verification: a motile, Gram negative bacillus and lactose fermenter with acid and gas production, which gives negative results on the citrate test and indol production positive.

Collect, dilute and prepare samples and volumes to be filtered as required according to specifications, directives, official standard regulations and/or expected results.

Note: Incubation times greater than those mentioned above or different incubation temperatures may be required depending on the sample, on the specifications. After incubation, enumerate the yellowish colonies as pressupive *E. coli* or any other coliform. Calculate total microbial count per ml of sample by multiplying the average number of colonies per membrane by the inverse dilution factor. Report results as Colony Forming Unit (CFU's) per ml along with incubation time and temperature.

Confirmation of *E. coli* detection is required with further microbiological or biochemical tests.

MICROBIOLOGICAL CONTROL

Membrane Filtration /Practical range 100 ± 20 CFU. min. 50 CFU (productivity).. / 10⁴-10⁶ CFU (selectivity) / ≥ 10³ CFU (specificity).

Microbiological control according to ISO 11133:2014/A1:2018.

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020

Aerobiosis. Incubation at 36 ± 2 °C, reading at 21±3 h

Microorganism	Growth
<i>Escherichia coli</i> ATCC® 25922, WDCM 00013	Good (≥ 50%) Colonies Yellow-orange under MF
<i>Escherichia coli</i> ATCC® 8739, WDCM 00012	Good (≥ 50%) Colonies Yellow-orange under MF
<i>Citrobacter freundii</i> ATCC® 43864, WDCM 00006	Good (≥ 50%) Colonies Yellow-orange under MF
<i>Enterococcus faecalis</i> ATCC® 19433, WDCM 00009	Partial Inhibition
<i>Ps. aeruginosa</i> ATCC® 9027, WDCM 00026	Good- Red colonies w. blue center.
<i>Escherichia coli</i> ATCC® 11775, WDCM 00090	Good (≥ 50%) Colonies Yellow-orange under MF
<i>E. coli</i> NCTC® 13167, WDCM 00179	Good (≥ 50%) Colonies Yellow-orange under MF

Sterility control:

Incubation 48 hours at 30-35 °C and 48 hours at 20-25 °C: NO GROWTH.
 Check at 7 days after incubation in same conditions.

BIBLIOGRAPHY

- ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
- CHAPMAN G.H. (1951) A culture medium for detecting and confirming *E. coli* in ten hours. Am. J. Publ. Hlth 41:1381-1386.
- DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods. 3rd ed. APHA. Washington.
- GUINEA, SANCHO,PARES (1979) Análisis Microbiológico de Aguas. Ed. Omega. Barcelona.
- ISO 9308-1:2000 Standard. Water Quality - Detection and enumeration of *Escherichia coli* and coliform bacteria - Part 1: Membrane filtration method.
- SPECK, M (Ed.) (1982) Compendium of Methods for the Microbiological Examination of Foods. 2nd ed. APHA. Washington.

STORAGE

2-25 °C

SHELF LIFE

6 months unopened from date of manufacture

updated: 06.06.2023

