Coliform / *E. coli* Chromogenic Contact Plates

Catalogue No. AS-717 · Ready-to-use contact plates (55 mm)

1. Intended Use

Ready-to-use 55 mm chromogenic contact plates for detecting and differentiating coliforms and E. coli on surfaces, on personnel and in air.

For laboratory microbiological testing, quality control and research use only. Not intended for direct use in food, human or veterinary therapeutic applications, diagnosis, or consumption.

2. Mode of Action

SDS inhibits most Gram-positive organisms. β-D-galactosidase-positive coliforms cleave Magenta-Gal (magenta/purple colonies). E. coli is detected by the chromogenic mixture (blue-green colonies).

3. Typical Formulation (g/L)

Component	g/L
Meat peptone	10.00
Yeast extract	7.00
Sodium chloride	5.00
Sodium dodecyl sulfate (SDS)	0.20
Chromogenic mixture	0.04
5-Bromo-6-chloro-3-indolyl-β-D-galactopyranoside (Magenta-Gal)	0.08
Agar	14.50
Total	36.82

Formulation may be adjusted to meet performance specifications.

4. Product Specifications

Format	Ready-to-use contact (RODAC-type) plates, 55 mm, convex agar surface
Fill volume	15.5 ± 1.0 mL per plate (convex meniscus above the rim)
Contact area	Approximately 25 cm²
Pack size	10 plates per pack (as stated on label)
Storage	2–8 °C, in the dark, in the original sleeve, agar side up. Do not freeze.
Shelf life	Expiry stated on label; batch-specific
pH (25 °C)	7.2 ± 0.2
Incubation	35–37 °C, 18–24 hours (up to 48 hours if your procedure requires), aerobic

5. Directions for Use

1. Bring plates to room temperature. Discard any plate with condensation on the agar, contamination or damage.
2. Remove the lid. Press the convex agar surface firmly onto the test surface for about 10 seconds with even pressure (about 500 g). Do not slide or rotate the plate.
3. Personnel: press gloved fingertips gently onto the agar. Air: leave the open plate exposed, for example for 15 minutes.
4. Replace the lid, label the plate, and clean the sampled area to remove residual medium.
5. Incubate inverted as directed, then count colonies by colour.

Incubation: 35–37 °C, 18–24 hours (up to 48 hours if your procedure requires), aerobic.

6. Interpretation of Results

Organism group	Colony colour
Escherichia coli	Blue-green
Other coliforms (Citrobacter, Enterobacter, Klebsiella, Serratia)	Magenta / purple
Other Gram-negative organisms	Colourless

Total coliforms = blue-green + magenta/purple colonies. Report as CFU per plate (CFU/25 cm²).

7. Quality Control

Incubation: 35–37 °C, 18–24 hours (up to 48 hours if your procedure requires), aerobic.

Organism	Strain	Inoculum (CFU)	Growth	Colony colour
Escherichia coli	ATCC 25922	≤100	Good growth	Blue-green
Citrobacter freundii	ATCC 8090	≤100	Good growth	Magenta / purple
Klebsiella aerogenes	ATCC 13048	≤100	Good growth	Magenta / purple
Pseudomonas aeruginosa	ATCC 27853	≤100	Growth	Colourless
Staphylococcus aureus	ATCC 25923	10^4–10^6	Partial to complete inhibition	Colourless, if any

8. Limitations

- Some β-glucuronidase-negative E. coli strains, including most E. coli O157:H7, do not give the E. coli colour and are counted as coliforms.
- A small number of non-coliform organisms may show β-galactosidase activity. Confirm atypical colonies with standard biochemical tests.
- The medium does not contain disinfectant neutralisers (lecithin, polysorbate 80). Residual disinfectant on sampled surfaces may reduce recovery.
- Contact plates suit flat, smooth surfaces only. Use swabs for irregular surfaces.

9. Disposal

Used plates contain viable microorganisms. Autoclave (121 °C, at least 15 minutes) or incinerate. If neither is possible, flood plates with 5–10 % bleach, leave overnight, then discard according to local regulations.

10. Related Standards (for user reference)

- ISO 18593:2018 — Microbiology of the food chain — Horizontal methods for surface sampling

- ISO 14698-1 — Cleanrooms and associated controlled environments — Biocontamination control
- ISO 16649-2 — Enumeration of β-glucuronidase-positive Escherichia coli (TBX principle)

11. Literature / References

6. Manafi M., Kneifel W., Bascomb S. (1991). Fluorogenic and chromogenic substrates used in bacterial diagnostics. Microbiol. Rev. 55:335–348.
7. Manafi M. (2000). New developments in chromogenic and fluorogenic culture media. Int. J. Food Microbiol. 60:205–218.
8. Frampton E.W., Restaino L., Blaszko N. (1988). Evaluation of the β-glucuronidase substrate X-GLUC in a 24-hour direct plating method for Escherichia coli. J. Food Prot. 51:402–404.
9. Perry J.D. (2017). A decade of development of chromogenic culture media for clinical microbiology. Clin. Microbiol. Rev. 30:449–479.

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