AuSaMicS™ Life Science

# Technical Data Sheet

TDS-AS-1151

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## Product Identification

| | |
|---|---|
| Product Name | Brilliant Green Bile Agar (BGBA) |
| Catalog No. | AS-1151 |
| Lot No. | BGB260301 |
| Mfg. Date | March 2026 |
| Retest Date | March 2028 |
| Grade | Microbiological Grade — Highly Selective Salmonella Medium |
| Formulation | Based on Kristensen/Kauffmann Brilliant Green Bile formulation |

## Physical & Chemical Properties

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|---|---|
| Appearance (powder) | Homogeneous; light beige to pale yellow-green powder |
| Appearance (prepared) | Green-amber gel; medium turns brownish-amber on cooling |
| Odour | Faint, characteristic (peptone/bile) |
| pH (prepared, 25 °C) | 7.2 ± 0.2 |
| Agar gel / melt | Gels ~32–34 °C / Melts ~84–86 °C |
| Loss on Drying | ≤ 7.0% w/w (105 °C / 2 h) |
| Suspension | 55.1 g / L — dissolves completely on boiling (NO AUTOCLAVE) |

## Composition per Litre

| Component | Function | Amount (g/L) |
|---|---|---|
| Peptone | Nitrogen, amino acids — supports Salmonella colony size | 10.0 |
| Meat Extract | Growth factors, vitamins, minerals | 5.0 |

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| Component | Function | Amount (g/L) |
|---|---|---|
| Ox Bile (dried) — 2% | Primary selective agent — near-complete suppression of coliforms and Proteus | 20.0 |
| Sodium Chloride | Osmotic balance | 5.0 |
| Brilliant Green | Inhibits Gram-positive and most coliform Gram-negatives; synergises with bile | 0.0047 |
| Phenol Red | pH indicator — Salmonella: pink-red; no fermentable sugars so no colour masking | 0.09 |
| Agar | Solidifying agent | 15.0 |
| TOTAL | | 55.1 |

**CRITICAL: DO NOT AUTOCLAVE — Boiling only. Autoclaving destroys brilliant green and bile salt selectivity.**

## Preparation Protocol

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| Step 1 — Suspension | Suspend 55.1 g of dehydrated BGBA in 1 L of purified water. |
| Step 2 — Dissolution | Heat with frequent agitation. Bring to a full boil for 1 minute until completely dissolved. |
| Step 3 — NO AUTOCLAVE | DO NOT autoclave. Autoclave destroys brilliant green and bile salts, eliminating selectivity and differential properties. |
| Step 4 — Cooling | Cool to 45–50 °C with gentle mixing. |
| Step 5 — Pouring | Pour 15–20 mL per 90 mm Petri dish. Allow to solidify on a level surface. |
| Step 6 — Drying | Dry plates at 37 °C for 15–20 min. Store at 2–8 °C, protected from light. Use within 7 days. |
| Inoculation | Surface-plate 0.1–0.5 mL enrichment broth. Incubate 35–37 °C for 18–24 h. |

## Incubation & Colony Reading

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| Temperature | 35–37 °C |

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| Duration | 18–24 h primary; up to 48 h for slow growers |
| Salmonella | Pink-red to red colonies; 2–5 mm; smooth, convex, well-defined |
| Coliforms | Completely or almost completely inhibited |
| Proteus | Completely inhibited |
| Confirmation | All suspect colonies must be confirmed by TSI, API 20E, VITEK, PCR, and/or serotyping |
| Note | Not suitable for S. Typhi and S. Paratyphi |

## Quality Control Specifications

| Parameter | Specification | Method |
|---|---|---|
| Appearance (powder) | Homogeneous; light beige to pale yellow-green; no lumps | Visual inspection |
| pH (prepared, 25 °C) | 7.0 – 7.4 | Potentiometry (ISO 10523) |
| Loss on Drying | ≤ 7.0% w/w | 105 °C / 2 h (gravimetric) |
| Growth — S. typhimurium ATCC 14028 | Good growth; pink-red 2–5 mm; ≥ 50% recovery | ISO 11133 growth test |
| Growth — S. enteritidis ATCC 13076 | Good growth; pink-red colonies; ≥ 50% recovery | ISO 11133 growth test |
| Inhibition — E. coli ATCC 25922 | Complete / ≥ 99% inhibition | ISO 11133 selectivity |
| Inhibition — Proteus mirabilis ATCC 12453 | Complete / ≥ 99% inhibition | ISO 11133 selectivity |
| Sterility (prepared medium) | No growth at 14 days (30–35 °C) | Incubation sterility check |

## Limitations

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| Typhoidal Salmonella | NOT suitable for S. Typhi and S. Paratyphi — use Bismuth Sulfite or SS Agar |
| Presumptive Only | BGBA is a presumptive medium; all suspect colonies require biochemical and serological confirmation |

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| No H2S indicator | Does not differentiate H2S-producing Salmonella; use alongside XLD or BS Agar |
| Autoclave Warning | Autoclaving destroys selectivity — product must be prepared by boiling only |

## Technical References

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| Original Reference | Kristensen M., Lester V. & Jorgens A. (1925). Uber die Verwendung von tetrathionat-nahrboden und von brillant-grun bei der Typhusdiagnose. |
| Modification | Kauffmann F. & Kristensen M. — Brilliant Green Bile Agar, modified formulation |
| ISO Standard | ISO 6579-1:2017 — Horizontal method for detection of Salmonella spp. |
| FDA-BAM | FDA Bacteriological Analytical Manual Chapter 5 — Salmonella |
| Historical Use | Referenced in German and Nordic national food microbiology standards |