

TECHNICAL DATA SHEET

Tetrathionate Broth Base

Principle

Tetrathionate Broth is used for isolation of enteric pathogens and inhibit growth of coliforms. The media is composed of meat extract, peptone, yeast extract, sodium chloride, calcium carbonate, brilliant green and sodium thiosulphate. Meat extract, peptone and yeast extract in the medium provide nutrients essential for the growth of microorganism. The brilliant green inhibits the growth of the majority of Gram-negative and Gram-positive, bacteria. Sodium chloride maintains osmotic equilibrium and calcium carbonate neutralizes the acidic biproducts of tetrathionate decomposition. After sterilization potassium iodide is added which react with sodium thiosulphate to form thiosulphate and tetrathionate. The formed thiosulphate and tetrathionate suppress the growth of coliform organisms and provide selectivity to the medium.

Use: For isolation of Salmonellae from faecal samples, sewage and other samples.

Contents*

Ingredients	Gram/Liter
Meat Extract#	0.900
Peptone	4.500
Yeast Extract	1.800
Sodium Chloride	4.500
Calcium Carbonate	25.000
Sodium Thiosulphate	40.700
Brilliant green	0.012

*** Formula adjusted for optimum performance and parameters**

Directions: Dissolve 77.50 g in 980 ml distilled water. Heat just too boiling. Do Not Autoclave or Overheat. Cool below 45-50 °C, add 20 ml iodine solution, mix well and distribute aseptically in sterile test tubes and inoculate test sample aseptically.

Preparation of Iodine solution: dissolve 5 g of potassium iodide and 6 g of iodine in 20 ml distilled water).

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Specimens types analyzed
Clinical and biological samples etc.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light beige with green ting colored free flowing, homogeneous powder
Color and clarity of ready medium with potassium iodide solution.	Light green opalescent with white precipitate, on standing the precipitate settles down
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

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Different Microbial Response

Prepare medium as per label directions. Cultural characteristics are observed with added iodine solution when subculture on Xylose Lysine Deoxycholate Agar (RDM-XLDA-01) after enrichment in Tetrathionate medium after an incubation at 35-37°C for 18-72 hours.

Organism	ATCC	Inoculum (CFU)	Growth	Recovery	Colony Color on XLDA
<i>Salmonella typhimurium</i>	14028	50-100	Luxuriant	≥ 60%	Red with black centers
<i>Salmonella abony</i>	NCTC 6017	50-100	Luxuriant	≥ 60%	Red with black centers
<i>Salmonella enterica</i>	9150	50-100	Luxuriant	≥ 60%	Red with black centers

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.
2. Difco Manual (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.
3. Downes F P and Ito K(Eds.), (2001), *Compendium of Methods for The Microbiological Examination of Foods*, 4th Ed., APHA, Washington, D.C.
4. The Indian Pharmacopoeia (1996), Vol. II.

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