

## TECHNICAL DATA SHEET

### Mueller Kauffman Tetrathionate Broth Base

#### Principle

Mueller Kauffman Tetrathionate Broth Base is used for isolation of Salmonella species. The media is composed of casein peptone, soya peptone, sodium chloride, calcium carbonate, sodium thiosulphate, ox bile. Casein and soya peptone provide nutrients essential for the growth of microorganism. 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. Ox bile and brilliant green as selective agents to suppress bacteria such as Proteus species.

**Use:** For improved enrichment and isolation of Salmonellae.

#### Contents\*

Ingredients	Gram/Liter
Casein peptone	7.000
Soya peptone	2.300
Sodium chloride	2.300
Calcium carbonate	25.000
Sodium thiosulphate	40.700
Ox bile	4.750

\* Formula adjusted for optimum performance and parameters

**Directions:** Dissolve 82.00 g in 970 ml distilled water and heat just too boiling. Cool below to 45-50 °C, and add 20 ml iodine solution, and 10 ml of 0.095% brilliant green solution. Mix well and distribute aseptically in sterile test tubes in such a manner to distribute equal amount of calcium carbonate in all tubes. Inoculate test sample aseptically.

**Preparation of Iodine solution:** dissolve 5 g of potassium iodide and 4 g of iodine in 20 ml distilled water.

Specimens types analyzed

Clinical and biological samples etc.

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## Precautions to be taken

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

## Quality Control

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

## Different Microbial Response

Prepare medium as per label directions, Cultural characteristics observed with added brilliant green and iodine solution when sub cultured on Xylose Lysine Deoxycholate Agar (RDM-XLDA-01) after enrichment in Mueller Kauffman Tetrathionate Broth Base, after an incubation at 35-37°C for 18-72 hours. Inoculate with 50-100 CFU of test organism.

Organism	ATCC	Inoculum	Growth	Colony Color on XLDA
<i>Salmonella typhimurium</i>	14028	50-100	Luxuriant	Red with black centers
<i>Salmonella enterica</i>	9150	50-100	Luxuriant	Red with black centers
<i>Salmonella abony</i>	NCTC 6017	50-100	Luxuriant	Red with black centers
<i>Escherichia coli</i>	8739	50-100	Poor	Yellow
<i>Shigella flexneri</i>	9199	50-100	Inhibited	--

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**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). 11<sup>th</sup> 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, 4<sup>th</sup> Ed., APHA, Washington, D.C.
4. The Indian Pharmacopoeia (1996), Vol. II.

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