

TM 413 – TETRATHIONATE BROTH BASE (as per IP)

INTENDED USE

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

PRODUCT SUMMARY AND EXPLANATION

Tetrathionate Broth Medium was originally described by Mueller and found that the medium selectively inhibit coliforms and permit unrestricted growth of enteric pathogens. The medium is now formulated according to Indian Pharmacopoeia. Compendium of Microbiological Examination of Foods and Standard Methods for the Examination of Water and Wastewater specify this medium as enrichment medium for *Salmonella* species. *Salmonella* is the common causative agent of mild gastroenteritis to typhoid. It is common contaminant in food and other biological products. This medium supports the rejuvenation of *Salmonella* cells injured by food processing which are incapable of forming colonies on plate, but on injection can cause infection.

COMPOSITION

Ingredients	Gms / Ltr
Beef extract	0.900
Peptone	4.500
Yeast extract	1.800
Sodium chloride	4.500
Calcium carbonate	25.000
Sodium Thiosulphate	40.700

PRINCIPLE

The selectivity depends on the ability of thiosulphate and tetrathionate (formed by addition of Iodine and Potassium iodide) in combination to suppress commensal coliform organisms. The microorganism harboring tetrathionate reductase flourish in this broth. Sodium thiosulphates are inactivators of halogens and can minimize its toxicity in the testing sample, if any during microbial limit tests. Yeast extract, meat extract B and peptone provides essential nutrients, growth factors and vitamins in this medium. Calcium carbonate neutralizes the acidic tetrathionate decomposition products. Sodium chloride maintains osmotic balance.

INSTRUCTION FOR USE

- Suspend 77.40 grams in 980 ml purified/ distilled water.
- Heat just to boiling. Cool below 45-50°C and aseptically add 20 ml iodine solution (6 grams of iodine and 5 grams of potassium iodide in 20 ml distilled water).
- Mix well and dispense in 10 ml quantities in sterile tubes. This complete medium should be used on the day of preparation. Do not heat after the addition of iodine solution.
- Use the medium immediately after addition of iodine. Note: Due to presence of calcium carbonate, the prepared medium forms opalescent solution with a white precipitate.

QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : Cream to yellow homogeneous free flowing powder.
- Appearance of prepared medium** : Complete medium with added brilliant green and iodine solution - Light green opalescent with white precipitate, on standing the precipitate settles down.



INTERPRETATION

Cultural characteristics observed with added brilliant green and iodine solution when sub cultured on Xylose Lysine Deoxycholate Agar after enrichment in Tetrathionate medium, after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
<i>Salmonella</i> Typhimurium	14028	50-100	Luxuriant	>=50 %	Red with black centres	10-25°C	18-72 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.













Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

- Mueller, 1923, Compt. Rend. Sco. Biol., 89:434.
- The Indian Pharmacopoeia (1996), Vol. II.
- Downes F P and Ito K(Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
- Eaton A. D., Clesceri L. S. and Greenberg A W,(Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st ed., APHA, Washington, D.C.
- Pollock M.R. and Knor R., 1943, Biochem J., 37:476.
- MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria., Vol. 1, Williams and Wilkins, Baltimore.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 EC REP Authorized Representative <small>MedNet GmbH Bockmuse 10, 48163 Münster, Germany</small>	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices -
*For Lab Use Only
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