

## 84922 Selenite Cystine Broth

For the enrichment of *Salmonella* from feces, food and other material.

### Composition:

Ingredients	Grams/Litre
Mixed peptone	5.0
Lactose	4.0
Sodium dihydrogen phosphate	10.0
Sodium hydrogen selenite	4.0
L-Cystine	0.01
Final pH (at 25°C)	7.0 +/- 0.2

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Faint yellow and faint beige and faint grey coloured, homogeneous, free flowing powder.  
 Gelling: Firm  
 Color and Clarity: Light yellow and light brown yellow and light brown coloured, clear slightly hazy solution.

### Directions:

Dissolve 23 g in 1 litre distilled water. Warm carefully but not above 60°C. Do NOT sterilize. Pour into sterile containers. Sterile filter for longer storage. Store in the dark at 4°C. Discard on formation of a sediment or when the solution turns reddish.

Add solid sample material to the normal-strength broth. Mix liquid samples with double-strength broth in the ratio 1:1. After 6-12 h and, if necessary, after 18-24 h inoculate material from the resulting culture onto selective culture media.

### Principle and Interpretation:

Selenite inhibits the growth of coliform bacteria and enterococci in the first 6-12 hours of incubation, its inhibitory effect then gradually declines. *Salmonella*, *Proteus* and *Pseudomonas* are, however, only slightly inhibited. Peptone is a source of nitrogenous nutrients. Sodium dihydrogen phosphate is the pH buffering agents and the lactose is the fermentable carbohydrate. L-cystine promotes the growth of *Salmonella* and sodium hydrogen selenite is the selective reagent, it inhibits the growth of gram-positive bacteria, coliform bacteria and enterococci in the first 6-12 hours of incubation

Cultural characteristics after 18-24 hours at 35-37°C – according to Bänfer [2] and other authors 43 °C is better

Organisms (ATCC)	Inoculum	Growth
<i>Escherichia coli</i> (25922)	≥ 10 <sup>4</sup>	-
<i>Salmonella typhimurium</i> (14028)	10-100	+++

### References:

- American Public Health Association, Compendium of methods for the microbiological examination of foods. 3rd edition (1992)
- Bänfer, J.R., Comparison of the isolation of *Salmonellae* from human faeces by enrichment at 37 °C and 43°C. Zbl. Bakt. I. Orig. 217: 35-40 (1971)
- Bundesgesundheitsamt: Amtliche Sammlung von Untersuchungsverfahren nach § 35 LMBG. - BeuthVerlag Berlin, Köln. DIN Deutsches Institut für Normung e.V.: Mikrobiologische Milchuntersuchung. Nachweis von *Salmonellen*. Referenzverfahren. - DIN 10181.
- Georgala, D. L. and Boothroyd, M., A system for detecting salmonellae in meat and meat products. Journal of Applied Bacteriology. 28: 206-212 (1965)
- United States Pharmacopeia XXIII, Chapter "Microbial Limit Tests" (1995)

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

