H_2S Test Medium (powder) K019

Bacteriological field-testing kit for drinking water using H_2S test medium.

H_2S Test Medium is recommended for the detection of *Salmonella* species and *Citrobacter* species from water samples.

Direction:

Fill the bottle with water up to arrow level (20 ml). Allow to dissolve the powder and if required shake gently. Keep at room temperature (preferably at 32-35°C) for 24-48 hours. After incubation if color turns black, water is not fit for drinking.

Note: Add few drops of some disinfectant (i.e. dettol, phenyl etc.) and discard the bottle. Preferable to use the autoclave wherever the facility is available.

Principle and Interpretation:

The importance of clean water for Health has long been recognised. Yet it is still a problem around the world. Human faecal contamination is one of the major reason for water born diseases, global health problem. In 1993, WHO (1) recommended regular monitoring of drinking water for complete absence of thermotollerent coliform and *Salmonella* species. Coliform bacteria may not be adequate as sole indicator of recent faecal contamination. It is studied that there is no co-relation between coliform and presence of *Salmonella* species in water, in tropics (2, 3).

The analysis of *Salmonella* by routine culture method is lengthy process. However K019 – H_2S Test Medium Kit is rapid, portable and reliable field testing kit for drinking water. This kit can detect *Salmonella* serotype Typhimurium and *Citrobactor freundii* based on detection of Hydrogen sulphide (4) even in absence of coliform. It is rich in growth factors and nitrogen source. Addition of cysteine makes the medium more sensitive and the test less time consuming for detection of *Salamonella* serotype Typhimurium and *Citrobactor freundii* (5). H_2S test medium is having ferric salts which are reduced by certain species of enteric organisms to H_2S. This medium is having sufficient buffering action and inhibitory effect for growth of gram-positive organisms.

Quality Control:

Appearance:

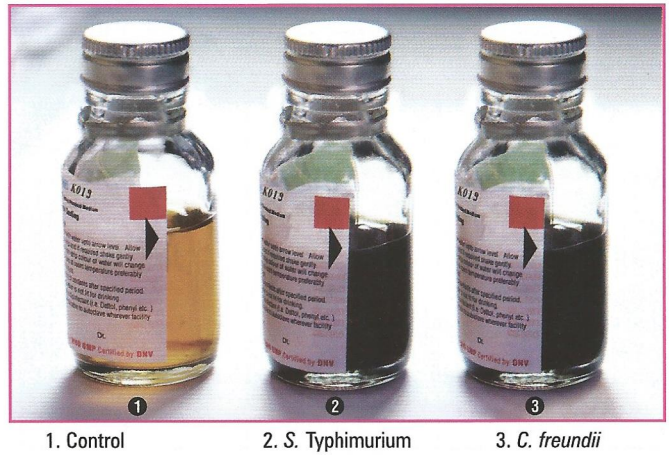
Light yellow to yellowish brown coloured, homogeneous powder in glass bottles.

Colour and Clarity :

Dark amber coloured clear solution obtained on addition of water up to mark.

Cultural Response :

Cultural characteristics observed after an incubation of 24 – 48 hours at ambient temperature between 25°C to 44°C.



1. Control 2. *S.* Typhimurium 3. *C. freundii*

Oraganism (ATCC)	Growth	H_2S production
C. freundii (8090)	luxuriant	+
S. Typhimurium (23564)	luxuriant	+

Key : + = positive, blackening of the medium

References:

1. WHO, 2006, Guidelines for drinking water quality, Vol. 1 Recommendations, 1st Addendum to 3rd edition.
2. Townsend S.A., 1992, The relationships between *Salmonellas* and faecal indicator bacteria concentrations in two pools in the Australia wet / dry tropics. Journal of Appl. Bacteriol. 73:182-188.
3. Peterson D.J., and Schorsch I., 1980, The microbiological surveillance of drinking water in Western Australia. WA Health Surveyor.2 (June). 7-11.
4. Manja K.S., Maurya M.S. and Rao K.M., 1982, A simple field test for the detection of faecal pollution in drinking water. Bulletin of the World Health Organisation, 60:797-801.
5. Sobsey M.D. and Pfaender F.K. Evaluation of the H2S Method for Detection of Faecal contamination of Drinking water, Geneva.

Storage and Shelf-life :

Store below 30°C. It has shelf-life of 2 years.