Fluid Thioglycollate Medium (i23343)

For cultivation and isolation of obligate and facultative anaerobic and microaerophilic bacteria and for sterility tests.

Industry: Quality Control / Pharmaceutical / Veterinary

Principles & Uses

Fluid Thioglycollate Medium, originally developed by Brewer, is a versatile culture medium used for cultivating a wide range of microorganisms, including aerobes, anaerobes, and microaerophiles. It finds extensive applications in sterility testing of antibiotics, biologicals, foods, and even for assessing the sterility of stored blood in blood banks. The components in this medium serve various functions. Glucose, Peptone, yeast extract, and L-cystine provide essential growth factors for bacterial multiplication. Sodium thioglycollate acts as a reducing agent, enabling anaerobiosis and neutralizing the toxic effects of heavy metal compounds. The small amount of agar in the medium promotes the growth of both aerobes and anaerobes, even when sodium thioglycollate is absent. The medium also contains a redox indicator, resazurin, which changes color in response to changes in oxygen content.

Composition (gr/L)

Peptone from Casein 15, Yeast Extract 5, D-Glucose 5.5, L-Cysteine 0.5, Sodium Chloride 2.5, Sodium Thioglycollate 0.5, Resazurin 0.001, Agar 0.75g.

Final pH at 25°C 7.1 ± 0.2

Preparation from dehydrated Powder

Suspend 30 g of the powder in 1 L of distilled water. Dispense into tubes. Autoclave at 121°C for 15 min.

Quality Control

Dehydrated Appearance: Light beige, free-flowing, homogeneous.

Prepared Appearance: Light amber, slightly opalescent, 10% or less of upper layer may be medium pink. After shaking solution becomes pink throughout.

Reaction of 3.0% Solution at 25°C: pH 7.1 ± 0.2

Cultural Response

Inoculate and incubate at 30-35°C for 18-48 hours (up to 72 hours, if necessary). To test for growth promotion according to the USP/EP, inoculate using organisms marked with (*) and incubate aerobically at 30-35°C for up to 5 days.

Organism (ATCC*)	Recovery
Clostridium perfringens (13124)	Good
Clostridium novyi (7659)	Good
Escherichia coli (25922)	Good
Bacillus subtilis (6633)*	Good
Staphylococcus aureus (6538)	Good
Pseudomonas aeruginosa (9027)*	Good

*ATCC is a registered trade mark of the American Type Culture Collection.

Prepared culture medium with 10% or less of upper layer may be medium pink (left). *E. coli* (middle). *S. aureus* (right). All of them are covered with mineral oil.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.