



Fluid Thioglycollate Medium

Medium for sterility test and cultivation of microorganisms, according to Harmonized USP/EP/JP and ISO 7937.

INTENDED PURPOSE

Fluid Thioglycollate Medium is a liquid medium used for sterility control and for cultivation of fastidious anaerobic and aerobic microorganisms.

DESCRIPTION

Fluid Thioglycollate Medium is a general-purpose liquid medium used for cultivation and isolation of fastidious anaerobic and aerobic microorganisms. It is also used as an enrichment medium for sterility testing.

This medium meets the requirements of the harmonized method in the United States Pharmacopoeia (USP), European Pharmacopoeia (EP) and Japanese Pharmacopoeia (JP) as well as with ISO 7937 for isolation of *Clostridium perfringens*.

TYPICAL FORMULA*

(g/l)

Enzymatic Digest of Casein	15.0
Yeast Extract	5.0
Glucose	5.5
Sodium Chloride	2.5
Sodium Thioglycollate	0.5
L-Cystine	0.5
Resazurin	0.001
Agar	0.75
Final pH 7.1 ± 0.2 at 25°C	

*Adjusted and/or supplemented as required to meet performance specifications.
Grams per liter of purified water

METHOD PRINCIPLE

Enzymatic digest of casein provides amino acids, nitrogen, carbon, vitamins and minerals for organisms growth. Yeast extract is a source of vitamins, particularly of B-group. Glucose is a source of energy. Sodium chloride maintains the osmotic balance of the medium. Sodium Thioglycollate and L-Cystine are included to reduce the redox potential of the medium and create an anaerobic atmosphere. These agents also neutralize the bacteriostatic effects of mercury and other heavy metal compounds in preparation to be tested for sterility. Resazurin is an oxidation-reduction indicator being pink when oxidized and colorless when reduced. The small amount of agar assists in the maintenance of a low redox potential by stabilizing the medium against convection currents, thereby maintaining anaerobiosis in the lower depths of the medium.

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as: inoculating loops, sterile cotton swabs, physiological solution, incubator, quality control organisms.

TEST PROCEDURE

Inoculate the sample or material to be tested into the medium. Incubate under appropriate atmosphere, temperature and time depending on the purpose for which the media are used.

Refer to listed references for more details.

INTERPRETING RESULTS

Turbidity of the medium indicates microbial growth. Obligate anaerobic microorganisms such as *Clostridium sporogenes* are growing in the lower, yellowish part of the broth medium. The growth of facultative anaerobic microorganisms such as *Staphylococcus aureus* is distributed throughout all the medium.

Aerobic microorganisms such as *Pseudomonas aeruginosa* are able to grow in the upper slightly pink layer (oxidized part) of the medium.

STORAGE

Store at 10-25°C away from light. Do not use the product beyond its expiry date on the label or if product shows any evidence of contamination or any sign of deterioration.

SHELF LIFE

2 years.

QUALITY CONTROL

Appearance of medium: Slightly opalescent, light amber (20% or less of upper layer may be pink).

Expected Cultural Response:

Control strains	Inoculum	Incubation	Specification
<i>Bacillus subtilis</i> ATCC® 6633	≤ 100 CFU	24 h / 32.5 ± 2.5°C	Visible turbidity
<i>Clostridium sporogenes</i> ATCC® 19404			
<i>Escherichia coli</i> ATCC® 8739			
<i>Pseudomonas aeruginosa</i> ATCC® 9027			
<i>Staphylococcus aureus</i> ATCC® 6538		18-24 h / 37 ± 1°C	Slight to good turbidity
<i>Clostridium perfringens</i> ATCC® 13124		48 h / 22.5 ± 2.5 °C	
<i>Candida albicans</i> ATCC® 10231		72 h / 22.5 ± 2.5 °C	
<i>Aspergillus brasiliensis</i> ATCC® 16404			

Please refer to the actual batch related Certificate of Analysis (CoA).

PERFORMANCE CHARACTERISTICS

Performance testing of Fluid Thioglycollate Medium was carried out using the QC strains listed above. The results obtained met the established criteria.

LIMITATIONS

Invalid results can be caused by poor sample quality, improper sample collection, improper transportation, improper laboratory processing, or a limitation of the testing technology. The operator should understand the principles of the procedures, including its performance limitations, in advance of operation to avoid potential mistakes.

Growth depends on the requirements of each individual microorganism. It is therefore possible that certain strains which have specific requirements (substrate, temperature, incubation conditions, etc.) may not develop.

WARNING AND PRECAUTIONS

For professional use only. Operators must be trained and have certain experience. Please read the instructions carefully before using this product. Reliability of assay results cannot be guaranteed if there are any deviations from the instructions in this document.

Consult the Safety Data Sheet (SDS) for information regarding hazards and safe handling practices.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

BIBLIOGRAPHY

See the references at the end of this document.

TABLE OF SYMBOLS

See the table of symbols at the end of this document.

ORDER INFORMATION

Product	Format	Packaging	Ref.
Fluid Thioglycollate Medium	16x100mm Plastic Tube with screw cap and self-standing base	100 x 10 ml	26124P

Revision History

Revision	Release Date	Change Summary
0	2024-10-22	Document creation

This IFU document and the SDS are available from the online Support Center:

liofilchem.com/ifu-sds

References

1. EN ISO 11133:2014+Amd1:2018+Amd2:2020. Microbiology of food, animal feed and water – Preparation, production, storage and performance testing of culture media.
2. European Pharmacopoeia (EP) 2.6.1 Sterility.
3. United States Pharmacopoeia (USP) Sterility Tests.
4. Japanese Pharmacopoeia (JP) 4.06 Sterility Tests.
5. ISO 7937:2004. Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of *Clostridium perfringens* – Colony count technique.
6. Brewer J.H. 1940. Clear liquid medium for the aerobic “cultivation” of anaerobes. J. Am. Med. Assoc. 115:598-600.

Table of Symbols

	Batch code
	Catalogue number
	Manufacturer
	Use by
	Fragile, handle with care
	Temperature limitation
	Contains sufficient for <n> tests
	Consult instructions for use
	Do not reuse
	Keep away from sunlight



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