

Technical Information

Perfringens Agar Base (T.S.C.)

Product Code: DM 1837I

Application: - Perfringens Agar Base (T.S.C) is recommended for the enumeration of *Clostridium perfringens* from food .The composition and performance criteria of this medium are as per the specifications laid down in ISO 7937:1985.

Composition**

Ingredients	Gms / Litre
Tryptose	15.000
Soya peptone	5.000
Yeast extract	5.000
Sodium metabisulphite	1.000
Ferric ammonium citrate	1.000
Agar	15.000
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Perfringens Agar Base is also recommended by APHA (3). Perfringens Agar Base (DM 1837I) is recommended for enumeration of *C.perfringens* from foods by ISO Committee (4). Tryptose Sulphite Cycloserine Agar (TSC) was originally modified by Harmon et al (1) for the enumeration of *C.perfringens* from food. TSC Agar has been documented as one of the most useful media for the quantitative recovery of *C. perfringens* while suppressing growth of other facultative anaerobes (2).

Tryptose, soya peptone, yeast extract, supply nitrogenous and carbonaceous compounds, long chain amino acids, vitamin B complex and trace elements essential for clostridial growth. Sodium metabisulphite and ferric ammonium citrate act as an indicator of sulphite reduction, indicated by black coloured colonies. D-cycloserine (MS 2014) helps in the selective isolation of *C.perfringens* by inhibiting accompanying flora. Homogenized food samples can be directly streaked on the surface of plates or can be pre-enriched in Cooked Meat Medium (DM 1149) before streaking.

Type of specimen

Food and animal feed samples.

Specimen Collection and Handling

For food and animal feed samples, follow appropriate techniques for sample collection and processing as per guidelines (4). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets



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Limitations

1. Some species of Clostridia may show poor growth. Pre enrichment may be required.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Methodology

Suspend 21 grams of dehydrated powder media in 500 ml distilled water. Mix thoroughly & heat to boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and add rehydrated contents of one vial of TSC Supplement (MS 2014). Alternatively if fluorogenic detection is desired add rehydrated contents of Clostridium perfringens supplements (MS 2243). When used for membrane filtration methods do not use MS 2014. Shake well before pouring into sterile Petri plates.

Quality Control

Appearance

Light yellow to brownish yellow homogeneous free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity

Amber coloured clear to slightly opalescent gel.

Reaction

Reaction of 4.2% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH Range

7.40-7.80

Cultural Response

DM 1837I: Cultural characteristics observed under anaerobic condition with added TSC Supplement (MS 2014) and Egg Yolk Emulsion (MS 2045), after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Sulphite Reduction	Fluorescence
<i>Clostridium perfringens</i> ATCC 12924	50-100	luxuriant	>=50%	positive, blackening of medium	Positive Reaction
<i>Clostridium sordellii</i> ATCC9714	>=10 ³	inhibited	0%	-	-

Storage and Shelf Life

Dried Media: Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (5, 6).





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Further Reading

1. Harmon S. M., Kauttar D.A. and Peiler J. T., 1971, Appl. Microbiol., 22:688.
2. Harmon S. M. and Kautter D.A., 1987, J. Asso. Off. Anal. Chem., 70: 994.
3. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
4. International Organization for Standardization (ISO- 7937:2004) : Microbiology of food and animal feeding stuffs- Horizontal method for the enumeration of Clostridium perfringens- Colony count technique
5. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Tenover, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate
- Central Drug House Pvt. Ltd. reserves the right to make changes to specifications and information related to the products at any time.
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