



## Modified Iron Sulphite Agar Base

M1629

Modified Iron Sulphite Agar Base is recommended for the detection and enumeration of clostridia in meat and meat products.

### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Yeast extract	10.000
Sodium sulphite	0.500
Agar	15.000
Final pH ( at 25°C)	6.9±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 20.25 grams in 500 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add rehydrated contents of 1 vial of Iron Sulphate Supplement (FD237). Mix well and pour into sterile Petri plates.

### Principle And Interpretation

Sulphite-reducing *Clostridium* is sought as an index organism for *Clostridium botulinum*, as general hygiene indicators, or as a means of detecting faults in food processing. Sulphite reductase activity is a common property among clostridia. Modified Iron Sulphite Agar Base utilizes the ability of the genus *Clostridium* to reduce sulphite, which reacts with iron citrate to form ferrous sulphide, staining the colonies black (2, 3). Modified Iron Sulphite Agar Base is recommended by ISO (4) for the detection and enumeration of clostridia in meat and meat products.

The medium contains casein enzymic hydrolysate and yeast extract, which act as sources of nitrogen, carbon, vitamins and minerals. Reduction of sulphite and precipitation of the resultant sulphide as a black deposit involves an appropriate iron salt that yields iron sulphide. The reaction is seen as a black halo around each colony. Inclusion of a fermentable carbohydrate in the medium can lead to a rapid fall in pH during bacterial growth and failure to precipitate the sulphide (1). Clostridia grow to form black colonies in an anaerobic environment.

### Quality Control

#### Appearance

Cream to yellow homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

Yellow to amber coloured clear to slightly opalescent gel forms in Petri plates

#### Reaction

Reaction of 4.05% w/v aqueous solution at 25°C. pH : 6.9±0.2

#### pH

6.70-7.10

#### Cultural Response

M1629: Cultural characteristics observed with added Iron Sulphate Supplement (FD237), after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Blackening
<b>Cultural Response</b> <i>Clostridium perfringens</i> <i>ATCC 10543</i>	50-100	good	40-50%	positive

---

<i>Clostridium perfringens</i> ATCC 13124	50-100	good	40-50%	positive
<i>Clostridium botulinum</i>	50-100	good	40-50%	positive
<i>Escherichia coli</i> ATCC 25922	50-100	fair	20-30%	negative
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	poor	10-20%	negative
<i>Bacillus cereus</i> ATCC 11778	50-100	poor	10-20%	negative

### Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

### Reference

1. Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam
2. Prevot A. R., and Thouvenot H., 1954, Ann. Inst. Pasteur, 86, 236-237
3. Skovgaard N., 1958, VIII Nordiska Veterianarmotel Sektion E., Rapport 2, 1-7
4. International Organization for Standardization (ISO): Meat and Meat Products. Mesophilic Clostridial Spores- Working Draft ISO/TC/34/SC 6 (1971).

Revision : 2 / 2015

### Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.