



# Technical Data

## Mineral Modified Glutamate Agar Base (Twin Pack)

M643I

Mineral Modified Glutamate Agar Base is used for the enumeration of *Escherichia coli* from meat and meat products. The composition and performance criteria of this medium are as per the specifications laid down in ISO 1996, Draft ISO 1988, Draft ISO/DIS 6391.

### Composition\*\*

Ingredients	Gms / Litre
Part A	-
Lactose	10.000
Dipotassium phosphate	0.900
Sodium formate	0.250
L-Cystine	0.020
L-Aspartic acid	0.024
L-Arginine	0.020
Thiamine	0.001
Nicotinic acid	0.001
Pantothenic acid	0.001
Ferric ammonium citrate	0.010
Calcium chloride, 2H <sub>2</sub> O	0.010
Magnesium sulphate, 7H <sub>2</sub> O	0.100
Agar	15.000
Part B	-
Sodium glutamate	6.350
Final pH ( at 25°C)	6.7±0.2

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

### Directions

Suspend 26.29 grams of dehydrated Part A and 6.35 grams of Part B in 1000 ml distilled water containing 2.5 grams ammonium chloride. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 10 lbs (115°C) for 10 minutes. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

Folpners (1) described a glutamic acid based chemically defined medium for the enumeration of coliform bacteria from water and wastewater. This glutamate-containing medium was later modified by Gray (2), by the addition of lactose, which gave less false positive results when compared to MacConkey Broth.

Mineral Modified Glutamate Agar Base is recommended for the enumeration of *Escherichia coli* from meat and meat products by colony count at 44°C by membrane filtration technique. Anderson and Baird-Parker (3) described a direct plate method for the rapid enumeration of *E. coli* in foods and this method was modified by a resuscitation procedure using Mineral Modified Glutamate Agar with successful recovery of damaged cells from frozen, dried, heat processed or low pH foods.

This media contain a variety of nutrients including salts, amino acids and vitamins. Lactose is the fermentable carbohydrate. Because of the nutrients, this media is superior for enumerating coliforms in water and wastewater as it satisfies most of the nutritional requirements of coliforms.

### Quality Control

#### Appearance

Part A : Off-white to light yellow homogeneous free flowing powder Part B : Colourless to White needles

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates

**Please refer disclaimer Overleaf.**

**Reaction**

Reaction of the medium (2.634% w/v Part A + 0.635% w/v Part B + 0.25% ammonium chloride) is at 25°C. pH : 6.7±0.2

**pH**

6.50-6.90

**Cultural Response**

Cultural characteristics observed after an incubation at 44°C for 24 hours.

**Cultural Response**

Organism	Inoculum (CFU)	Growth	Recovery
<b>Cultural Response</b> <i>Escherichia coli ATCC 25922</i>	50-100	luxuriant	≥50%

**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.Folpmers T., 1948, Ant. V. Leeuwenhoek, J. Microbiol. Serol., 14:58.
- 2.Gray R.D., 1959, J. Hyg. Camb., 57:249.
- 3.Anderson J. M., and Baird Parker A. C., 1975, J. Appl. Bacteriol., 39:111.
- 4.International Organization for Standardization (ISO), 1988, Draft, ISO/DIS 6391.

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