

TM 1043 - MINERAL MODIFIED GLUTAMATE MEDIUM BASE (DOUBLE STRENGTH)

INTENDED USE

For enumeration of coliform bacteria in water.

PRODUCT SUMMARY AND EXPLANATION

Mineral Modified Glutamate Medium is used for enumeration of coliforms in water and wastewater samples. Folpners first described a chemically defined medium based on glutamic acid for enumerating coliforms in water. However, in the early days following its discovery, it was seen that the medium containing glucose gave many false positive results in 48 hours. It was then modified by Gray who incorporated formate and lactose in the medium which gave improved performance. This medium can also be used for detecting *Escherichia coli* in chlorinated waters and is better than Lauryl Tryptose Lactose Broth for the detection of small numbers of *Escherichia coli*.

Presumptive positive tubes must be subcultured into Lauryl Tryptose Mannitol Broth and Brilliant Green Bile Broth and incubated at 44°C to detect indole formation at this temperature before identifying *Escherichia coli*.

COMPOSITION

Ingredients	Gms / Ltr
Lactose	20.000
Dipotassium phosphate	1.800
Sodium formate	0.500
L-Cystine	0.040
L-Aspartic acid	0.048
L-Arginine	0.040
Thiamine	0.002
Nicotinic acid	0.002
Pantothenic acid	0.002
Magnesium sulphate	0.200
Ferric ammonium citrate	0.020
Calcium chloride	0.020
Bromo cresol purple	0.020

PRINCIPLE

This medium contains a variety of nutrients including salts, amino acids and vitamins. Lactose is the fermentable carbohydrate and bromo cresol purple is the pH indicator. Because of the nutrients, this medium is superior for enumerating coliforms in water and wastewater as it satisfies most of the nutritional requirements of coliforms.

INSTRUCTION FOR USE

- Dissolve 22.7 grams in 1000 ml distilled water containing 12.7 grams of sodium glutamate and 5 grams of ammonium chloride.
- Heat if necessary to dissolve the medium completely.
- Dispense in tubes containing inverted Durham's tubes.
- Sterilize by autoclaving at 10 psi pressure 115°C for 10 minutes.



QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to green homogeneous free flowing powder.
Appearance of prepared medium : Purple coloured clear solution without any precipitate.
pH (at 25°C) : 6.7±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Acid	Gas	Incubation Temperature	Incubation Period
<i>Enterobacter aerogenes</i>	13048	50-100	Luxuriant	Positive reaction	Negative reaction	35-37°C	18-48 Hours
<i>Enterococcus faecalis</i>	29212	≥10 ³	Inhibited	-	-	35-37°C	18-48 Hours
<i>Escherichia coli</i>	25922	50-100	Luxuriant	Positive reaction	Positive reaction	35-37°C	18-48 Hours
<i>Salmonella Typhi</i>	6539	50-100	Luxuriant	Negative reaction	Negative reaction	35-37°C	18-48 Hours
<i>Shigella flexneri</i>	12022	50-100	Luxuriant	Negative reaction	Negative reaction	35-37°C	18-48 Hours
<i>Staphylococcus aureus</i>	25923	≥10 ³	Inhibited	-	-	35-37°C	18-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

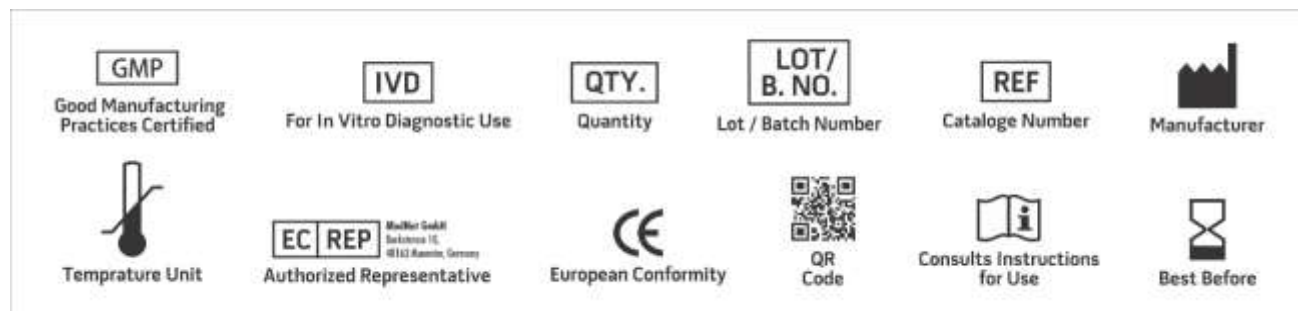
DISPOSAL



After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Folpmer T., 1948, Ant. V. Leeuwenhoek, J. Microbiol. Serol., 14:58.
2. Public Health Laboratory Service, Water Committee, 1958, J. Hyg. Camb., 56:377.
3. Gray R.D., 1959, J. Hyg. Camb., 57:249.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
Revision: 08 Nov., 2019