CM 20180 – ASPARAGINE NITRATE MEDIUM

INTENDED USE

For cultivation and isolation of denitrifying bacteria from soil.

PRODUCT SUMMARY AND EXPLANATION

Asparagine Nitrate Mediumisformulatedas per Subba Rao. Nitrogen transformation in soil results in the loss of molecular nitrogen. The conversion of nitrate and nitrite into molecular nitrogen or nitrous oxide through microbial processes is known as denitrification. Denitrification of bound nitrogen to gaseous nitrogen is mediated by numerous species of bacteria, which normally use oxygen as hydrogen acceptor (aerobic). These bacteria also possess the ability to use nitrate and nitrite in the place of oxygen as the hydrogen acceptor (anaerobically).

COMPOSITION

Ingredients	Gms / Ltr
Potassium nitrate	1.000
L-Asparagine	1.000
Sodium citrate	8.500
Potassium dihydrogen phosphate	1.000
Magnesium sulphate	1.000
Calcium chloride	0.200
Ferric chloride	0.0001
Agar	15.000

PRINCIPLE

Asparagineis source of organic nitrogen and is readily available for microbial energy and growth while the salts in the medium help for growth of microorganisms.

INSTRUCTION FOR USE

Dissolve 27.7gramsin 1000 ml purified / distilled water.
Heat to boiling to dissolve the medium completely.
Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: White to cream homogeneous free flowing powder.
Appearance of prepared medium	: Light amber coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C)	: 7.0 ± 0.2

INTERPRETATION

Culturalcharacteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
Achromobacter denitrificans	14648	50-100	Luxuriant	>=70%	25-30°C	7 Days
Bacillus subtilis subsp. spizizenii	6633	50-100	Luxuriant	>=70%	25-30°C	7 Days
Micrococcus luteus	10240	50-100	Luxuriant	>=70%	25-30°C	7 Days
Pseudomonas aeruginosa	27853	50-100	Luxuriant	>=70%	25-30°C	7 Days
Thiobacillus denitrificans	29685	50-100	Good	40-50%	25-30°C	7 Days

PACKAGING:

Inpacksizeof100 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.

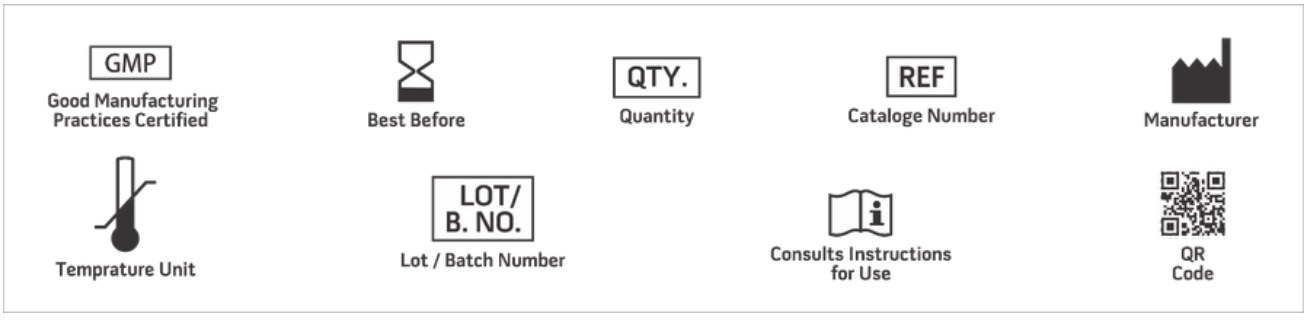
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
3. Subba Rao, 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., India.



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

*For Lab Use Only