



## Asparagine Nitrate Medium

M724

Asparagine Nitrate Medium is used for the isolation and cultivation of denitrifying bacteria.

### Composition\*\*

| Ingredients                    | Gms / Litre |
|--------------------------------|-------------|
| 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      |

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

### Directions

Suspend 27.7 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

### Principle And Interpretation

Asparagine Nitrate Medium is formulated as per Subba Rao (1). 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).

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

### Quality Control

#### Appearance

White to cream homogeneous free flowing powder

#### Gelling

Firm, comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

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

#### Cultural Response

M724: Cultural characteristics observed after an incubation at 25-30°C for upto 7 days.

| Organism                                      | Growth    |
|---|-----------|
| <i>Achromobacter denitrificans</i> ATCC 14648 | luxuriant |
| <i>Bacillus subtilis</i> ATCC 6633            | luxuriant |
| <i>Micrococcus luteus</i> ATCC 10240          | luxuriant |
| <i>Pseudomonas aeruginosa</i> ATCC 27853      | luxuriant |
| <i>Thiobacillus denitrificans</i> ATCC 29685  | good      |

### 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 label.

## Reference

1. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.

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.