

## TM 558 – BURK'S MEDIUM

### INTENDED USE

For isolation and cultivation of nitrogen fixing bacteria like *Azotobacter* species.

### PRODUCT SUMMARY AND EXPLANATION

Nitrogen fixing organisms are free-living bacteria, which grow well on a nitrogen free medium. These bacteria utilize atmospheric nitrogen gas for their cell protein synthesis. This cell protein is then mineralised in soil after the death of the cells, thereby contributing towards the nitrogen availability of the crop plants. Burks medium is recommended for detection of nitrogen fixing organisms such as *Azotobacter* species from soil.

### COMPOSITION

| Ingredients                    | Gms / Ltr |
|--------------------------------|-----------|
| Magnesium sulphate             | 0.200     |
| Dipotassium hydrogen phosphate | 0.800     |
| Potassium dihydrogen phosphate | 0.200     |
| Calcium sulphate               | 0.130     |
| Iron (III) Chloride            | 0.00145   |
| Sodium molybdate               | 0.000253  |
| Sucrose                        | 20.000    |

### PRINCIPLE

This medium contains inorganic salts along with carbohydrate source but lacks nitrogen source. Nitrogen fixing bacteria are able to fix atmospheric nitrogen and grow when cultured on this nitrogen-free medium.

### INSTRUCTION FOR USE

- Dissolve 21.3 grams in 1000 ml purified / distilled water.
- Heat if necessary to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Mix well and dispense as desired.

### QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : White to cream homogeneous free flowing powder.  
**Appearance of prepared medium** : Colourless clear solution over a white precipitate.  
**pH (at 25°C)** : 7.3 ± 0.2

### INTERPRETATION

Cultural characteristics observed after incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Incubation Temperature | Incubation Period |
|---------------|------|-------------------|--------|------------------------|-------------------|
|               |      |                   |        |                        |                   |



|                                 |       |        |                |      |        |
|---------------------------------|-------|--------|----------------|------|--------|
| <i>Azotobacter beijerinckii</i> | 12981 | 50-100 | Good-luxuriant | 30°C | 7 Days |
| <i>Azotobacter nigricans</i>    | 35009 | 50-100 | Good-luxuriant | 30°C | 7 Days |

**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. 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 N. S. 1977, In: Soil Microorganisms and Plant Growth, Oxford & IBH Publishing Co., New Delhi, Pages 254-255.

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|--|---|---|--|---|
| <br>GMP<br>Good Manufacturing Practices Certified | <br>Best Before        | <br>Quantity                       | <br>Cataloge Number | <br>Manufacturer |
| <br>Temperature Unit                              | <br>Lot / Batch Number | <br>Consults Instructions for Use | <br>QR Code         |   |

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

**\*For Lab Use Only**  
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