

## TM 523 - CARBON UTILIZATION AGAR (ISP MEDIUM NO. 9)

### INTENDED USE

For characterization of *Streptomyces* based on carbon utilization.

### PRODUCT SUMMARY AND EXPLANATION

*Streptomyces* are a group of gram-positive bacteria belonging to *Actinobacteria* found in soil and decaying vegetation. Carbon Utilization Agar is developed as per International Streptomyces Project for the cultivation and differentiation of *Streptomyces purpureus* and other *Streptomyces* species based on carbohydrate utilization.

### COMPOSITION

Ingredients	Gms / Ltr
Ammonium sulphate	2.640
Potassium dihydrogen phosphate	2.380
Dipotassium hydrogen phosphate trihydrate	5.650
Magnesium sulphate heptahydrate	1.000
Copper sulphate pentahydrate	0.0064
Ferrous sulphate heptahydrate	0.0011
Manganese chloride heptahydrate	0.0079
Zinc sulphate heptahydrate	0.0015
Agar	15.000

### PRINCIPLE

In this medium various salts provide the electrolytes and minerals essential for the growth of *Streptomyces* species. The carbohydrates used for the studies are glucose, sucrose, xylose, arabinose, inositol, mannitol, fructose, rhamnose, raffinose or cellulose.

### INSTRUCTION FOR USE

- Dissolve 24.83 of grams of dehydrated medium in 900 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 and aseptically add 100 ml of 10% filter sterilized desired carbohydrate solution.
- Mix well and dispense as desired.

### QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Off-white to light yellow homogeneous free flowing powder.
Appearance of prepared medium pH (at 25°C)	: Colourless, clear to slightly opalescent gel forms in Petri plates. : 7.0±0.2

### INTERPRETATION

Cultural characteristics observed after an incubation with added 100ml/liter of 10% filter sterilized carbohydrate.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Streptomyces albus subsp albus</i>	3006	50-100	Good-luxuriant	>=50%	30-32°C	48-72 Hours
<i>Streptomyces lavendulae</i>	8664	50-100	Good-luxuriant	>=50%	30-32°C	48-72 Hours
<i>Streptomyces peucetius</i>	29050	50-100	Good-luxuriant	>=50%	30-32°C	48-72 Hours
<i>Streptomyces purpureus</i>	27787	50-100	Good-luxuriant	>=50%	30-32°C	48-72 Hours

**PACKAGING:**

In pack size of 100 gm and 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. Atlas R. M., 1993, Handbook of Microbiological Media, Parks L.C. (Ed.), CRC Press, Inc.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. 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.
4. Shirling E. B. and Gottlieb D., 1966, Methods for Characterization of Streptomyces species, Int. J. Syst. Bacteriol., 16:313.
5. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.



 GMP Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 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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