TM 1893 - ZINC SOLUBILIZING MEDIUM

INTENDED USE
For isolation and detection of zinc solubilizing soil microorganisms.

PRODUCT SUMMARY AND EXPLANATION
This medium is recommended for the growth and maintenance of zinc solubilizing bacteria Among all micro nurients, Zinc is a rather unique element for plant nutrition. Zinc (Zn) is one of the essential micronutrients required for optimum plant growth. Substantial quantity of applied inorganic zinc in soil is converted into unavailable form. Zinc solubilising bacteria are potential alternates for zinc supplement. Zinc solubilizing bacteria solubilize both the insoluble zinc compounds, though ZnO is more effectively solubilized in comparison to $ZnCO_3$.

COMPOSITION

Ingredients	Gms / Ltr
Dextrose (Glucose)	10.000
Ammonium sulphate	1.000
Potassium chloride	0.200
Dipotassium hydrogen phosphate	0.100
Magnesium sulphate, heptahydrate	0.200
Zinc oxide	1.000

PRINCIPLE
Dextrose acts as an energy source. Different salts provide various essential ions required for promoting growth of zinc solubilizers. Solubilization of zinc phosphate occurred by both an increase in the H+ concentration of the medium, probably a consequence of ammonia assimilation, and the production of gluconic acid.

INSTRUCTION FOR USE
- Dissolve 12.40 grams in 1000 ml 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 divide into sterile tubes.

QUALITY CONTROL SPECIFICATIONS
Appearance of Powder : Cream to white homogeneous free flowing powder
Appearance of prepared medium : Creamish white to slightly opalescent solution in tubes.

INTERPRETATION
Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Zinc solubilization	Incubation Temperature	Incubation Period

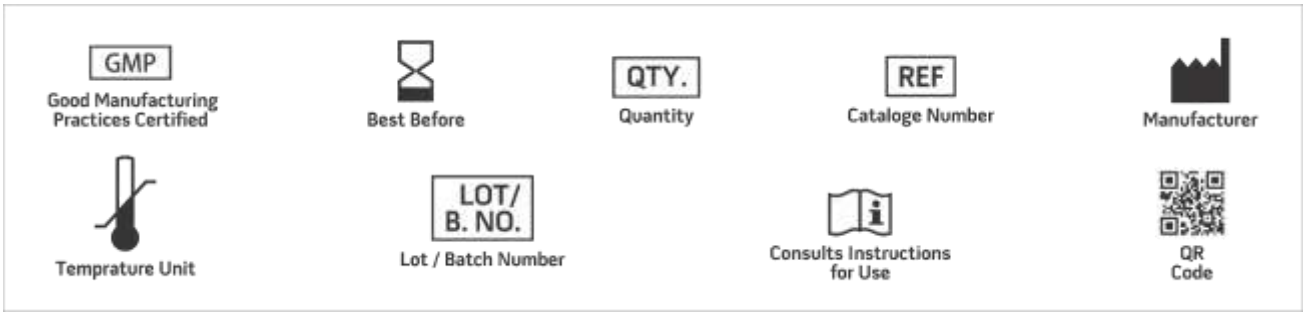
Pseudomonas fluorescens	49838	50-100	Luxuriant	Positive reaction	25-30°C	3-4 days
Pseudomonas fluorescens	13525	50-100	Luxuriant	Positive reaction	25-30°C	3-4 days
Bacillus cereus	10876	50-100	Luxuriant	Positive reaction	25-30°C	3-4 days

PACKAGING:
In pack size of 500 gm bottles.

STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 10-25°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. Subba Rao, 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., India.
2. Biology and Fertility of Soils November 1998, Volume 28, Issue 1, pp 87–94., C. D. Di Simine, J. A. Sayer, G. M. Gadd
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. Second Edition.
4. 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.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.
***For Lab Use Only**
Revision: 29 Nov., 2023