

TECHNICAL DATA SHEET

Zinc Solubilizing Broth (Zinc Solubilizing Medium)

Principle

Among all micro nutrients, 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 solubilizing 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 ZnCO₃ (4). Dextrose acts as an energy source. Different salts provides 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 (1). This medium is recommended for the growth and maintenance of zinc solubilizing bacteria.

Use: For growth and maintenance of zinc solubilizing soil microorganism.

Contents*

Ingredients	Gms / Litre
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

*** Formula adjusted for optimum performance and parameters**

Directions: Suspend 12.40 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

Specimens types analyzed

Soil samples, etc.

OXFORD LAB FINE CHEM LLP

ISO 9001-2008 Certified Company

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Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Cream to white homogeneous free flowing powder
Reaction	Reaction of 1.24% w/v aqueous solution at 25°C
Color and clarity of ready medium	Creamish white slightly opalescent solution

Different Microbial Response: Cultural characteristics observed after an incubation at 25-30°C for 3-4 days.

Organism	ATCC	Inoculum (CFU)	Growth	Zinc solubilization
<i>Pseudomonas fluorescens</i>	49838	50-100	Luxuriant	Clearing of the broth
<i>Pseudomonas fluorescens</i>	13525	50-100	Luxuriant	Clearing of the broth
<i>Bacillus cereus</i>	10876	50-100	Luxuriant	Clearing of the broth

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

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Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Biology and Fertility of Soils November 1998, Volume 28, Issue 1, pp 87–94., C. D. Di Simone, J. A. Sayer, G. M. Gadd
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. Subba Rao, 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., India.

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