



Sulphur Medium (Twin Pack)

M559

Sulphur Medium is used for the cultivation of *Thiobacillus thiooxidans*.

Composition**

Ingredients	Gms / Litre
Part A	-
Potassium dihydrogen phosphate	3.000
Magnesium sulphate, 7H ₂ O	0.500
Ammonium sulphate	0.300
Calcium chloride, 2H ₂ O	0.250
Ferric chloride, 6H ₂ O	0.020
Part B	-
Sulphur, elemental	10.000
Final pH (at 25°C)	4.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 3.74 grams of Part A in 1000 ml distilled water. Dissolve and dispense in 100 ml amounts in 250 ml conical flasks. Add 1 gram of Part B to each 100 ml medium. Sterilize with intermittent steam for 30 minutes on 3 consecutive days.

Principle And Interpretation

Thiobacillus thiooxidans are single-celled aerobic sulphur oxidizers that can reduce significant amount of inorganic sulphur compounds. The sulphate-reducing bacteria contribute greatly to tuberculations and galvanic corrosion of water mains and to taste and odour problems in water. *Thiobacillus*, by its production of sulphuric acid, has contributed to the destruction of concrete sewers and the acid corrosion of metals.

Sulphur Medium is prepared as per the recommendation of APHA (1) for cultivating *T. thiooxidans*. This organism was first discovered by Waksman and Joffe (2) in soils containing free sulphur and rock phosphate. *T. thiooxidans* derives its energy by the sulphur oxidation and survives at very acidic pH levels.

Elemental sulphur in the medium serves as the energy source for the organism. Ammonium sulphate serves as the nitrogen source while calcium, ferric chloride and magnesium sulphate supply inorganic ions. Potassium dihydrogen phosphate buffers the medium against pH changes.

Quality Control

Appearance

Part A - White to cream homogeneous free flowing powder Part B - Yellow to greenish yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Colourless clear solution with sulphur sediment.

Reaction

Reaction of 0.41% w/v aqueous solution at 25°C. pH : 4.8±0.2

pH

4.60-5.00

Cultural Response

Cultural characteristics observed after an incubation at 25-30°C after 4-5 days.

Cultural Response

Organism	Growth
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Cultural Response	
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Thiobacillus thiooxidans luxuriant
ATCC 19377

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 the label.

Reference

1. Eaton A. D., Clesceri L. S. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
2. Waksman S. A. and Joffe J. S., 1922, J. Bacteriol., 7:239.

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