

TM 1297 - SULPHUR MEDIUM (DOUBLE PACK)

INTENDED USE

For cultivation of *Thiobacillus thiooxidans*.

PRODUCT SUMMARY AND EXPLANATION

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 for cultivating *T. thiooxidans*. This organism was first discovered by Waksman and Joffe in soils containing free sulphur and rock phosphate. *T. thiooxidans* derives its energy by the sulphur oxidation and survives at very acidic pH levels.

COMPOSITION

Ingredients	Gms / Ltr
Part I	
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 II	
Sulphur, elemental	10.000

PRINCIPLE

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.

INSTRUCTION FOR USE

- Dissolve 4.7 grams of Part I in 1000 ml distilled water.
- Dissolve and dispense in 100 ml amounts in 250 ml conical flasks.
- Add 10 gram of Part II to each 100 ml medium.
- Sterilize with intermittent steam for 30 minutes on 3 consecutive days.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Part I - White to cream homogeneous free flowing powder. Part II - Yellow to greenish yellow homogeneous free flowing powder.
Appearance of prepared medium	: Colourless clear solution with sulphur sediment.
pH (at 25°C)	: 4.8±0.2

INTERPRETATION

Cultural characteristics observed after an incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
<i>Thiobacillus thiooxidans</i>	19377	50-100	Luxuriant	25-30°C	4-5 days

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. 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.



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

***For Lab Use Only**
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