

# TM 1941 – ATCC 2039 BROTH (DOUBLE PACK)

### **INTENDED USE**

Recommended for the growth and maintenance of Acidithiobacillus ferrooxidans by ATCC.

### PRODUCT SUMMARY AND EXPLANATION

This medium is recommended by ATCC for the maintenance and cultivation of *Acidithiobacillus ferrooxidans*.

## **COMPOSITION**

Ingredients	Gms / Ltr				
Part I					
Diammonium Sulphate	0.800				
Magnesium Sulphate.7H <sub>2</sub> O 2.015					
Dipotassium hydrogen phosphate	0.400				
Nitrilotriacetic acid	0.0075				
Manganese Sulphate. 7H <sub>2</sub> O	0.0025				
Sodium Chloride	0.005				
Ferrous Sulphate. 7H <sub>2</sub> O	0.0005				
Cobalt Chloride. 6H₂O	0.0005				
Calcium Chloride	0.0005				
Zinc Sulphate.7H <sub>2</sub> O	0.0005				
Copper Sulphate. 5H <sub>2</sub> O	0.00005				
Aluminium Potassium Sulphate.12H₂O 0.00005					
Boric Acid	0.00005				
Sodium Molybdate.2H <sub>2</sub> O	0.00005				
Part II					
Ferrous Sulphate.7H <sub>2</sub> O	20.000				

### **PRINCIPLE**

Acidithiobacillus ferrooxidans is gram negative, acidophillic, chemolithoautotrophic bacteria which obtains its energy source from oxidation of ferrous ions, elemental sulphur or partially oxidized sulphur compounds.

### **INSTRUCTION FOR USE**

- Dissolve 2.12 grams (the equivalent weight of dehydrated medium per litre) of Part I in 800 ml purified / distilled water.
- Adjust the pH of the solution to 2.3 with H<sub>2</sub>SO4.
- Filter sterilize the solution. Suspend 20.0 grams of Part II in 200ml purified / distilled water.
- Mix and stir well. Quickly filter sterilize the solution.
- Aseptically mix both the parts (Part A and B). Dispense as desired.

### **QUALITY CONTROL SPECIFICATIONS**















Appearance of Powder : Part I: White to pale green homogeneous free flowing powder

Part II: Light green to green crystals

Appearance of prepared medium : Yellow coloured opalescent solution with yellow precipitate which may

become darker on standing.

pH (at 25°C) : 2.3±0.1

### INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	АТСС	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
Acidithiobacillus ferrooxidans	23270	50-100	Good	25-30°C	7 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 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.

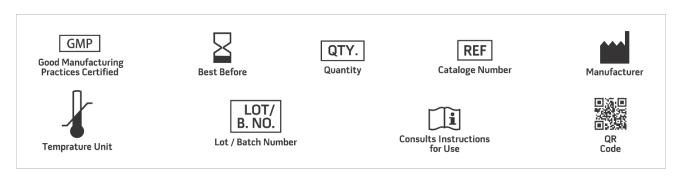
**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

### **DISPOSAL**

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

### **REFERENCES**

- 1. American Type Culture Collection. Catalogue of Bacteria and phages. 18th Edition 1992.
- 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. Leduc, L.G., Ferroni, G.D.(1994) The chemolithotrophic bacterium Thiobacillus ferroxidans. FEMS Microbiol. Lett.108, 103-120.
- 5. Rohwerder, T., Gehrke, T., Kinzler, K., Sand, W. (2003) Bioleaching review part A: Progress in bioleaching- Fundamentals and mechanism of bacterial metal sulfide oxidation. Appl. Microbiol. Biotechnol 63, 239-248.



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















\*For Lab Use Only Revision: 08 Nov., 2019









