

TM 2442 – BAT AGAR (ALICYCLOBACILLUS AGAR)

INTENDED USE

For the isolation of *Alicyclobacillus* species in fruit juices.

PRODUCT SUMMARY AND EXPLANATION

Alicyclobacillus species are gram positive aerobic thermophilic, and spore forming acidophilic bacteria. *Alicyclobacillus* are sometimes called Acidophilic Thermophilic Bacteria (ATB). These spore forming organisms are able to survive the relatively mild pasteurization temperatures used for fruit juices and drinks and some are able to grow out and cause spoilage of the beverage. Even very low numbers of *Alicyclobacillus* are able to cause spoilage and produce objectionable flavours and odours specially affecting the quality of fruit juice and in the beverages, damaging the brand. These bacteria are able to grow at pH values as low as 2.5 and also at elevated temperatures as high as 60°C.

BAT (Bacillus AcidoTerrestris) Agar has a pH of 4.0 ± 0.2 which supports growth of *Alicyclobacillus* species and inhibits most of the microbial flora. Rest of the microbial flora is inhibited at 60°C, which is the optimum growth temperature for *Alicyclobacillus* species.

COMPOSITION

Ingredients	Gms / Ltr
Yeast extract	2.000
Dextrose (Glucose)	5.000
Calcium chloride	0.25066
Magnesium sulphate	0.500
Ammonium sulphate	0.200
Potassium dihydrogen phosphate	3.000
Zinc sulphate	0.00018
Copper sulphate	0.00016
Manganese sulphate	0.00015
Cobalt chloride	0.00018
Boric acid	0.00010
Sodium molybdate	0.00030
Agar	18.000

PRINCIPLE

The medium contains yeast extract and glucose which acts as a source of energy. Phosphates present provides ions to the medium. Other salts help in maintaining osmotic pressure and agar acts as a solidifying agent.

INSTRUCTION FOR USE

- Dissolve 28.95 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.
- Mix well and pour into sterile Petri plates.

Note: Adjust the pH of the medium to 4.0 ± 0.2 (after sterilization) using 1N H₂SO₄ or 1N NaOH.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Light amber coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 4.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Alicyclobacillus acidoterrestris</i>	49025	50-100	Good to luxuriant	≥50%	60°C	48-72 Hours
<i>Alicyclobacillus acidocaldarius</i>	27009	50-100	Good to luxuriant	≥50%	60°C	48-72 Hours
<i>Escherichia coli</i>	25922	50-100	Inhibited	0%	60°C	48-72 Hours
<i>Staphylococcus aureus</i>	25923	50-100	Inhibited	0%	60°C	48-72 Hours
<i>Candida albicans</i>	10231	10-100	Inhibited	0%	60°C	48-72 Hours
<i>Saccharomyces cerevisiae</i>	19615	50-100	Inhibited	0%	60°C	48-72 Hours

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

- Ceny G., Hennish W. and K Rocallia-Furchtsaftwerb durch Baciilen. Isobioerung and Charakteriseeuing des Verdebserregens-Z hebers Utres Forsch 179: 224-227, 1984.
- Baumgart and Merve S., The Impact of Alicyclobacillus acidoterstris on the Quality of Juices and Soft Drinks Fruit processing 7: 251-254 (2000). Alicyclobacillus acidocaldarius ATCC 27009 good to luxuriant



3. BAUMGART, J. (2003) Media for detection and enumeration of Alicyclobacillus acidoterrestris and Alicyclobacillus acidocaldarius in foods. In handbook of culture Media for Food Microbiology, J.E.L. Corry et al,(Eds.) Elsevier Sci B.V. Amsterdam.

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

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

***For Lab Use Only**
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