

TM 311 – DEXTROSE TRYPTONE BROTH

INTENDED USE

For enrichment and cultivation of mesophilic and thermophilic organisms in foods.

PRODUCT SUMMARY AND EXPLANATION

Canned foods are most often prone to flat-sour spoilage due to contamination by either mesophilic or thermophilic aerobic spore-formers. Inadequate heat processing is commonly responsible for flat-sour spoilage since spores of mesophilic bacteria are moderately resistant to moist heat. Also *Bacillus stearothermophilus* is the typical species responsible for this type of spoilage. *Bacillus coagulans*, *Bacillus thermoacidurans*, a soil organism of canned tomato and dairy products. In flatsour spoilage, carbohydrates are fermented with the production of lower fatty acids, which sour the product. The small amount of gas produced does not affect the flat appearance of the ends of container.

Williams evolved Dextrose Tryptone Agar, a suitable medium for cultivation and enumeration of the thermophilic bacteria. It is also recommended for general cultural studies by Cameron and other associations. Dextrose Tryptone Agar is also useful for enumeration of mesophiles and thermophiles in cereal and cereal products, dehydrated fruits, vegetables and spices. Dextrose Tryptone Broth is similar in composition to Dextrose Tryptone Agar, with the exclusion of agar.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	10.000
Dextrose (Glucose)	5.000
Bromocresol purple	0.040

PRINCIPLE

The medium consists of Tryptone which provides nitrogenous and carbonaceous compounds, long chain amino acids and vitamins nutrients to the organisms. Dextrose serves as an energy source while bromo cresol purple is a pH indicator. Acid producing organisms produce yellow coloured medium. The tubes should be incubated at 55°C for 48 hours in a humid incubator. One to two grams of test sample is inoculated into 10 ml of broth media.

INSTRUCTION FOR USE

- Dissolve 15.04 grams in 1000 ml purified/distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense in tube or flasks as desired and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.

QUALITY CONTROL SPECIFICATIONS

- Appearance of Powder** : Light yellow to greenish yellow homogeneous free flowing powder.
Appearance of prepared medium : Purple coloured, clear solution in tubes.
pH (at 25°C) : 6.7 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of colony	Incubation Temperature	Incubation Period
<i>Bacillus brevis</i>	8246	50-100	Good-luxuriant (with or without dextrose fermentation)	Yellow	54-56 °C	36-48 Hours
<i>Bacillus coagulans</i>	8038	50-100	Good-luxuriant	Yellow	54-56 °C	36-48 Hours
<i>Bacillus stearothermophilus</i>	7953	50-100	Good-luxuriant	Yellow	54-56 °C	36-48 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

1. American Public Health Association, 1972, Standard Methods for the Examination of Dairy Products, 13th Ed. APHA, Washington, D.C.
2. American Public Health Association, 1976, Compendium of Methods for the Microbiological Examination of Foods, APHA, Washington, D.C.
3. Association of Official Analytical Chemists, 1978, Bacteriological Analytical Manual, 5th Edition, AOAC, Washington, D.C.
4. Cameron E. J., 1936, J. Assoc. Official Agr. Chem., 19:433.
5. Gordon R. E., Haynes and Pang C. H. N., 1973, The Genus Bacillus, Agriculture Handbook No. 407, U.S. Department of Agriculture, Washington, D.C.
6. Hersom A. C., and Hulland E. D., 1964, Canned Foods, An Introduction to Their Microbiology, (Baumgartner) 5th Ed. Chemical Publishing Company, Inc. New York, N.Y.
7. National Canners Association, 1954, A Laboratory Manual for the Canning Industry, 1st Edition, National Canners Associations, Washington.
8. National Canners Association, 1968, Laboratory Manual for Food Caners and Processors, Vol. I
9. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

 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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