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Technical Data Sheet

Nutrient Agar (MML-NA-01)

Principle
Nutrient agar is a basic medium and commonly used for cultivation, enrichment, enumeration, prolonged maintenance and storage of wide variety of microbes. The nutrient agar is widely used as non-selective microbial medium for routine microbiology analysis. Nutrient agar is prominently used for cultivation of the non-fastidious organisms. Nutrient agar is ideal microbial media for the teaching, demonstration and routine analysis. Nutrient Agar is a simple medium composed of the peptone, meat extract (equivalent to beef extract), yeast extract which provide ample amount of the carbon and nitrogen essential and non-essential amino acids, along with the vitamins and trace minerals. Sodium chloride maintains the osmotic equilibrium of the medium. Agar is solidifying agent.

Use: Recommended for the refinement of non-fastidious microorganisms from clinical and non-clinical samples. It is generally used for examination of water and dairy products.

Contents*

Ingredients	**Gram/Litre**
Peptone	5.0
Meat extract #	1.5
Yeast extract	1.5
Sodium chloride	5.0
Agar	15.0
pH at 25˚C	7.4±0.2

* Formula adjusted for optimum performance and parameters
# Equivalent to Beef Extract

Directions: Dissolve 28.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in desired. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed
Pharmaceutical samples, clinical and non-clinical samples, food and dairy products etc.

Precautions to be taken
These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation
The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Beige colored free flowing, homogeneous powder
Reaction of 2.8% solution	7.4 ±0.2 at 25 ˚C

pH	7.20- 7.60
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Pale yellow colored opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 ºC for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 ºC for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response

Organism	Inoculum	Growth	Recovery	Incubation Temperature	Incubation period
Escherichia coli (ATCC 8739)	50-100	Luxurious	80-90%	33-37 ℃	18-48 h
Bacillus spizizenii (ATCC 6633)	50-100	Luxurious	80-90%	33-37 ℃	18-48 h
Salmonella typhimurium (ATCC 14028)	50-100	Luxurious	80-90%	33-37 ℃	18-48 h
Staphylococcus aureus (ATCC 25923)	50-100	Luxurious	80-90%	33-37 ℃	18-48 h

Storage and Shelf Life

Hygroscopic; keep container tightly closed. Store in cool dry place.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.
2. *Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.
3. Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), *Standard methods for the examination of water and wastewater*. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.