OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

Litmus Milk (Litmus SM Broth)

Principle

Litmus milk medium, composed of skim milk powder, litmus and sodium sulphite. Milk contains lactose, which provides a carbohydrate source, casein, lactalbumin, and lactoglobulin provide the nitrogen source for microorganisms for determining their metabolic activity and, on that basis, identifying bacterial species. Litmus is an indicator that turns red in an acidic condition and blue in an alkaline condition. It is used as an acid-base indicator and indicates the oxidation-reduction (Eh) potential of the medium.

Interpretation of Test:

1. **Purplish-blue (alkaline reaction, no carbohydrate fermentation, and no indicator color change).**
2. **Light pink to red (acid reaction, carbohydrate (lactose) fermentation with the production of acid).**
3. **Clot or curd formation (Milk protein casein coagulation).**
4. **A clear, watery liquid is produced at the top of the coagulated tube (in alkaline coagulation, casein is converted to paracasein by the enzyme rennin).**
5. **Peptonisation (clearing of the medium due to digestion of milk protein).**
6. **White coloration (reduction of the litmus due to the action of reductase enzymes with the removal of oxygen to form the decolorized leuco litmus compound).**
7. **Stormy Fermentation (acid clots break down by a copious gas production).**

Use: For determination and maintenance of Lactobaclli.

Contents*

Ingredients	Gram/Liter
Skim milk powder	100.000
Litmus	0.500
Sodium sulphite	0.500
pH at 25˚C	6.8 ±0.2

*** Formula adjusted for optimum performance and parameters**

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Directions: Dissolve 101 grams in 1000 ml distilled water. Boil to dissolve the medium completely and distribute in test tube tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 4245 °C and inoculate test sample aseptically.

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	**Bluish tinge colored free flowing, homogeneous powder**
Reaction of 10.1% solution	**6.80 ±0.2 at 25 ˚C**
pH	**6.60 – 7.00**
Color and clarity of ready medium	**Light blue to purple colored opaque solution**
Growth Promotion properties	**Best at ≤ 100 CFU at 32-37 ºC for 5 days**
Indicative properties	**Optimum at ≤ 100 CFU at 32-37 ºC for 2-3 days**
Negative control	**Performed using sterile distilled water**

Different Microbial Response

Organism	ATCC	Inoculum	Growth	Reaction	Incubation period
Escherichia coli	**8739**	**50-100**	**Luxurious**	**Reduction of litmus to a white**	**5 days**
Pseudomonas aeruginosa	**27853**	**50-100**	**Luxurious**	**Peptonization (Milk protein digested, clearing of medium)**	**5 days**
Clostridium perfringens	**3624**	**50-100**	**Luxurious**	**Stormy fermentation**	**5 days**

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Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

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.**

Disclaimer:

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