OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

Regd Office: Unit no 12, 1st Floor,
Neminath Industrial Estate No.6,
Navghar, Vasai (East), Palghar - 410210.
Maharashtra, INDIA.

Tel: +91 250 2390032 / 2390989 / 2390990
Email: sales@oxfordlabchem.com /
info@oxfordlabchem.com
Web: www.oxfordlabchem.com

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Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

Orange Serum Agar

Principle

Orange Serum Agar was originally developed by Murdock et al (1951) and Hays (1951) for examining citrus concentrates. Orange serum agar provides an acid environment and is also a source of carbon, and other essential nutrients. The media is composed of tryptone, yeast extract, dextrose, Dipotassium phosphate, orange serum and agar. Tryptone and yeast extract provides nitrogenous, carbonaceous compounds, trace elements and other essential growth nutrients including vitamins. Dextrose is carbon and energy source. Phosphate buffers the medium. The low pH of medium inhibits many commensal bacteria and encourages growth of *Lactobacilli and* pathogenic fungi and yeast. Orange serum provides an optimal environment for the recovery of acid tolerant microorganisms from citrus fruit products.

Use: For the isolation & enumeration of spoilage organisms of citrus products & for examining fruit beverages.

Contents*

Ingredients	Gram/Litre
Tryptone	10.00
Yeast extract	3.00
Dextrose	4.00
Dipotassium phosphate	2.50
Orange serum	9.00
Agar	17.00
pH (at 25°C)	5.5 ±0.2

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

Directions: Dissolve 45.50 grams in 1000 ml purified / distilled water. Heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes (Avoid overheating). Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Specimens types analyzed
Food and dairy, clinical samples

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Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of trained and experienced technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving.

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	**Homogeneous Cream to beige free flowing powder**
Gelling	**Firm, comparable with 1.7% Agar**
Color and clarity of set medium	**Light cream colored, clear to slightly opalescent gel**
Reaction of 4.55 % w/v aqueous solution	**pH: 5.5 ± 0.2 at 25°C.**
pH	**5.30– 5.70 at 25°C**
Growth Promotion Properties	**Best at ≤100 CFU at 33-37ºC for 18-72 hours for bacteria and 25-30°C for 48-72 hours for yeast and molds.**
Indicative Properties	**Optimum at ≤100 CFU at 33-37ºC for 18-72 hours for bacteria and 25-30°C for 48-72 hours for yeast and molds.**

Different Microbial Response: Cultural characteristics observed after incubation at 33-37°C for 36-48 hours for bacteria and 25-30°C for 48-72 hours for yeast and molds.

Organism	ATCC	Inoculum	Growth	Recovery
Lactobacillus acidophilus	**4356**	**50-100**	**Luxuriant**	**≥ 60%**
Lactobacillus fermentum	**9338**	**50-100**	**Luxuriant**	**≥ 60%**
Lactobacillus plantarum	**8014**	**50-100**	**Luxuriant**	**≥ 60%**
Candida albicans	**10231**	**50-100**	**Luxuriant**	**≥ 60%**
Saccharomyces cerevisiae	**9763**	**50-100**	**Luxuriant**	**≥ 60%**
Aspergillus brasiliensis	**16404**	**50-100**	**Good**	**≥ 50%**

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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 used, unusable or modified preparation of this product must be disposed after autoclaving or incineration after completion of task.

Reference

1. **American Public Health Association (1978), Standard Methods for the Examination of Dairy Products, 14th Ed., Washington D.C.**
2. **Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and Wastewater, Wastewater, 20th Ed., American Public Health Association, Washington, D.C.**
3. **Downes F. P. and Ito K., (Ed.), (2001), Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.**
4. **Hays, G.L. (1951). The isolation, cultivation and identification of organisms which have caused spoilage in frozen concentrated orange juice. Proc. Florida State Hort. Soc., 54: 135.**
5. **Hays, G.L., and Reister, D.W. (1952). The control of "off-odor" spoilage in frozen concentrated orange juice. Food Tech., 6: 386-389.**
6. **Murdock, D.I., Folinazzo, J.F., and Troy, V.S. (1951). Evaluation of plating media for citrus concentrates. Food Tech., 6: 181- 185.**

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