# TECHNICAL DATA SHEET

**Article No. 9591**

**Orange Serum Agar, prepared plates**

## SPECIFICATION

Prepared plates, 90 mm. Solid medium for the culture of aciduric organisms especially those associated with the spoilage of citrus products and their derivatives.

Colour: Yellow
pH: 5.5 ± 0.2 at 25 ºC

## COMPOSITION IN G/L

| | |
|---|---|
| Orange Serum | 5.00 |
| Yeast Extract | 3.00 |
| Tryptone | 10.00 |
| Dextrose | 4.00 |
| Dipotassium phosphate | 3.00 |
| Agar | 17.00 |

## PACKAGING DETAILS

9591-20PLATES
20 prepared plates, 90 mm

| | |
|---|---|
| Content: | 21 ± 2 ml |
| Packaging unit: | 1 box with 2 cellophane bags with 10 plates/bag. |

## GUIDELINES

Description:
Orange Serum Agar was developed in the 1950's by Hays and coworkers for the detection, enumeration and isolation of spoilage microoganisms in fruit juices and products derived from citrus. Products with a low pH have microbial growth restricted to that of aciduric microorganisms. In a later study it was shown that Orange Serum Agar pH 5.4 was the most suitable medium for the isolation of lactic acid bacteria, especially (*Lactobacillus* and *Leuconostoc*) and yeasts that produce (buttermilk off-odour) in citrus fruits.
Orange Serum Agar is not a differential Agar but a culture medium in which the orange extract provides a favourable acidic environment in which aciduric microorganisms can be recovered including those damaged by food processing. Tryptone provides the main source of carbon and nitrogen, providing optimal growth conditions. Yeast Extract supplies Group B complex vitamins that stimulate growth and the phosphate provides an osmotic buffer for cell survival. Dextrose is a supplementary source of carbon and the agar is a solidifying agent.

Technique:
The International Fruchtsaft-Union (IFU) recommends the use of Orange serum agar in several standardised methods, using the plate count method:
1. Prepare serial 10-fold dilutions of the sample using a suitable diluent such as Buffered Peptone Water.
2. Distribute aliquots of 1 ml of the diluted sample in sterile Petri dishes.
3. Add 20 ml of molten sterile medium cooled to 45 ºC, gently swirl the dish to mix the sample and medium properly.
4. Allow it to solidify and incubate at a 30 ± 1 ºC for 48 hours before enumeration. If there is no growth extend the incubation to 5 days, reading daily before giving a negative result.
Generally the colonies of yeasts and moulds are distinguished by their morphology but those of aciduric bacteria need to be Gram stained and examined microscopically to be appropriately categorised.

## MICROBIOLOGICAL CONTROL

Inoculate:Practical range 100 ± 20 CFU. Min. 50 CFU (Productivity).

Microbiological control according to ISO 11133:2014/A1:2018.

Aerobiosis. Incubation at 30 ± 1 ºC Reading at 48 h - 5 days

| Microorganism | Growth |
|---|---|
| *S. cerevisiae* ATCC® 9763, WDCM 00058 | Good (≥50 %) |
| *Lactobacillus fermentum* ATCC® 9338 | Good (≥50 %) |
| *Aspergillus niger* ATCC® 16404 | Good (≥50 %) |

Sterility control:
Incubation 48 hours at 30-35 ºC and 48 hours at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

## BIBLIOGRAPHY


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## STORAGE

2-14 °C

## SHELF LIFE

3 months unopened from date of manufacture

updated: 16.12.2022