

## 01497 Yeast Extract Agar

A highly nutritive medium containing yeast extract as a source of vitamins. Used for the plate count of organisms in water.

### Composition:

| Ingredients                    | Grams/Litre |
|--------------------------------|-------------|
| Peptic digest of animal tissue | 5.0         |
| Yeast extract                  | 3.0         |
| Agar                           | 15.0        |

Final pH 7.2 +/- 0.2 at 25°C

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C. The appearance of the gel is yellow coloured and clear to slightly opalescent.

### Directions:

Suspend 23 g in 1000 ml distilled water. Heat to dissolve the medium completely. Sterilize by autoclaving 15 minutes at 121°C.

### Sample handling:

Dilute with Ringer Solution to an appropriate concentration of the water sample. The number of decimal dilutions depends on the expected contamination of the sample. Pipette 1ml of the water and of the different dilution into duplicate sterile petri dishes.

Add 15ml of molten Yeast Extract Agar (cooled to 45-50°C) and mix the contents by rapid shaking for 5-10 seconds.

Allow to solidify, and incubate duplicate sets of plates for 24 hours at 35-37°C and 3 days at 20-22°C. Count the plates with a number of 30-300 colonies unless the plates from the undiluted water contain less than 30 colonies.

### Principle and Interpretation:

Yeast Extract Agar is formulated according the formula described by Windle Taylor (1) for the plate count of microorganisms in water. In the UK the poured plate method is used for the inoculation. This medium can be used to detect bacteria, yeasts and moulds.

Separate counts are made of the organisms forming visible colonies after 24 hours at 35-37°C and the organisms forming colonies after 3 days at 20-22°C. Different results are expected (3).

Peptic digest of animal tissue and yeast extract provide nitrogenous compounds, vitamin B complex and other growth nutrients. Agar is the solidifying agents.

Cultural characteristics after 18-24 hours at 35-37°C

| Organisms (ATCC)                     | Growth |
|--------------------------------------|--------|
| <i>Escherichia coli</i> (25922)      | +++    |
| <i>Staphylococcus aureus</i> (25923) | +++    |

### References:

1. E. Windle Taylor, The Examination of Waters and Water Supplies, 7<sup>th</sup> ed., Churchill Ltd., London, pp. 394 and 778 (1958)
2. Dept. of Health and Social Security, report No. 71, HMSO, London, 54 (1982)
3. Environment Agency, Microbiology of Drinking Water 2002, Methods for Examination of Waters and Associated Materials (2002)

