

17209 R-2A Agar (R2A Agar; Ph. Eur. Medium S)

For heterotrophic plate count of water samples using longer incubation periods.

Composition:

| Ingredients | Grams/Litre |
|------------------------------|-------------|
| Casein acid hydrolysate | 0.5 |
| Yeast extract | 0.5 |
| Proteose peptone | 0.5 |
| Starch soluble | 0.5 |
| Glucose | 0.5 |
| Dipotassium phosphate | 0.3 |
| Magnesium sulfate | 0.024 |
| Sodium pyruvate | 0.3 |
| 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. Use before expiry date on the label.

Appearance: Faintly beige, homogeneous, free flowing powder.
 Gelling: Firm
 Colour and Clarity: Slightly yellow, clear solution

Directions:

Suspend 18.12 g in 1 litre distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes.

Principle and Interpretation:

R-2A Agar is a low nutrient medium that was developed by Reasoner and Geldreich for the bacteriological plate counts of treated drinking water. This application demands a medium that allows stressed and chlorine tolerant bacteria to recover without being overgrown by faster growing organisms in the meanwhile. The low nutrient R-2A Agar in combination with long incubation times and optional low incubation temperatures meets these requirements and gives distinctly higher recovery rates for debilitated microorganisms. Casein hydrolysate and peptone provide nitrogen, vitamins, amino acids, carbon and minerals. Yeast extract is a source of vitamins and essential trace elements. Soluble starch has a positive impact on the recovery of injured organisms due to its ability to absorb toxic metabolic by-products. Sodium pyruvate also aids with the recovery of stressed cells. Magnesium sulphate provides divalent cations and sulphate. Potassium phosphate is added to stabilize the pH and as a phosphate source. Agar acts as solidifying agent.

Consider appropriate standard procedures for sample taking and storage. Generally it is recommended to test water samples as soon as possible and store them refrigerated to minimize changes. R-2A Agar can be applied for spread or pour plate technique. Chose a dilution to have 30-300 colonies per plate. Compute CFU (Colony Forming Units) per volume considering your specific dilution. Plates should be counted after 5-7 days of incubation at 20-35°C.



| Organisms (ATCC) | Growth |
|--|--------|
| <i>Candida albicans</i> (10231) | +++ |
| <i>Enterococcus faecalis</i> (29212) | +++ |
| <i>Escherichia coli</i> (25299) | +++ |
| <i>S. serotype enteritidis</i> (10376) | +++ |
| <i>S. serotype typhi</i> (6539) | +++ |

References:

1. Reasoner and Geldreich, Appl. Environ. Microbiol., 49:1, (1985)
2. Greenberg et al., Standard Methods for the Examination of Water and Wastewater, 16th ed., APHA, Washington, DC. (1985)
3. Collins and Willoughby, Arch. Microbiol., 43:294, (1962)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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