# 17222 WL Nutrient Agar

For the examination of materials encountered in brewing and for industrial fermentations containing mixed flora of yeasts and bacteria.

## Composition:

| Ingredients | Grams/Litre |
|---|---|
| Casein enzymic hydrolysate | 5.0 |
| Yeast extract | 4.0 |
| Dextrose | 50.0 |
| Monopotassium phosphate | 0.55 |
| Potassium chloride | 0.425 |
| Calcium chloride | 0.125 |
| Magnesium sulfate | 0.125 |
| Ferric chloride | 0.0025 |
| Manganese sulphate | 0.0025 |
| Bromocresol green | 0.022 |
| Agar | 20.0 |
| Final pH 5.5 +/- 0.2 at 25°C | |

Store powder between 10-30°C and the prepared medium at 2-8°C. Use before expiry date on the label.

| | |
|---|---|
| Appearance: | Faintly green to greenish beige, homogeneous, free flowing powder. |
| Gelling: | Firm |
| Color and Clarity: | Blue to bluish green, clear solution, which may have slight precipitate. |

## Directions:

Suspend 80.25 g in 1 litre distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. If desired, to obtain a pH of 6.5, add 1% solution of sodium bicarbonate.

## Principle and Interpretation:

WL (Wallerstein Laboratory) media follow the formula described by Green and Gray (1,2) for the examination of materials related to brewing and for industrial fermentations containing mixed flora of yeasts and bacteria.
Yeast extract is a source of vitamins, amino acids and trace elements. Casein enzymic hydrolysate provides nitrogen, amino acids and carbon. Dextrose is the main carbon and energy source. Potassium phosphate is the buffering agent. Several salts in the medium provide essential ions and help to maintain osmotic balance. Bromocresol green acts as pH indicator and agar as solidifying agent.
Incubation conditions should be adapted to the application. Temperatures of 35+/-2°C is employed for bacteria while fungi are incubated at 30+/-2°C. Incubation time is about 2 days for bacteria and about 3 days for fungi.

Cultural characteristics observed after 40-72 hours and incubation at 27-35°C.

| Organisms (ATCC) | Growth (at 37°C) | Growth (at 30°C) |
|---|---|---|
| *Escherichia coli* (25922) | +++ | + |
| *Lactobacillus fermentum* (9338) | +++ | + |
| *Proteus mirabilis* (25933) | +++ | + |
| *Saccharomyces cerevisiae* (9763) | - | +++ |
| *Saccharomyces uvarum* (28098) | - | +++ |

References:
1. Green and Gray, 1950, Wallerstein Lab, Commun., 12:43
2. Green and Gray, 1950, Wallerstein Lab, Commun., 13:357
3. MacFaddin, 1985, Media for isolation-cultivation-identification-maintenance of medical bacteria, Vol. 1, Williams & Wilkins, Baltimore, Md.

**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.