

TECHNICAL DATA SHEET

WL - Nutrient Medium (WL - Nutrient Agar)

Principle

Green and Gray were developed as WL (Wallerstein Laboratory) nutrient media for the isolation and cultivation of yeast and bacteria encountered in the brewing industry. The WL nutrient medium is composed of tryptone, yeast extract, dextrose, buffering agent, ions, and divalent cations. Tryptone provides nitrogen, amino acids, and carbon sources, and yeast extract provides trace elements, vitamins, and amino acids to microorganisms. Dextrose provides a carbon source. Potassium dihydrogen phosphate is a buffering agent. Potassium chloride, calcium chloride, and ferric chloride provide essential ions for maintaining osmotic balance. Divalent cation sources provide magnesium sulfate and manganese sulfate. Bromocresol green is a pH indicator, and agar is the solidifying agent.

Use: For cultivation & isolation of microorganisms encountered in breweries & industrial fermentations.

Contents*

Ingredients	Gram/Litre
Tryptone	5.000
Yeast Extract	4.000
Dextrose	50.000
Potassium dihydrogen phosphate	0.550
Potassium chloride	0.425
Calcium chloride	0.125
Ferric chloride	0.0025
Magnesium sulfate	0.0025
Manganese sulfate	0.125
Bromocresol green	0.022
Agar	20.000
pH at 25°C	5.5±0.2

* Formula adjusted for optimum performance and parameters

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ISO 9001-2008 Certified Company

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Directions: Dissolve 80.25 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in desired. Ensure complete solidification and inoculate test sample aseptically.

Note: To obtaining bakers and distillers yeast counts adjust the pH 6.5 by using 1% sodium bicarbonate.

Specimens types analyzed

Brewing (Beers, liquid yeasts) samples.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

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	Light green colored, free flowing, homogeneous powder
Reaction of 8.25% solution	5.5 ±0.2 at 25°C
pH	5.3-5.7
Gelling	Firm comparable with 2.0% agar gel
Color and clarity of ready medium	Light bluish with greenish tinge, opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 25-30°C (Yeast) and 33-37°C (Bacteria) for 48-72 h
Indicative properties	Optimum at ≤ 100 CFU at 25-30°C (Yeast) and 33-37°C (Bacteria) for 48-72 h
Negative control	Performed using sterile distilled water

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Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate the plates at desired temperature and period. The optimum incubation for yeasts and molds is 25-30°C for 3 days and for bacteria 33-37°C for 24-48 hrs.

Organism	ATCC no.	Inoculum (CFU)	Growth	Recovery
<i>Escherichia coli</i>	8739	50-100	Luxurious	≥ 60%
<i>Lactobacillus fermentum</i>	9338	50-100	Luxurious	≥ 60%
<i>Proteus mirabilis</i>	12453	50-100	Luxurious	≥ 60%
<i>Saccharomyces cerevisiae</i>	9763	50-100	Luxurious	≥ 70%

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

Reference

1. Atlas, R. M. (2005). *Handbook of media for environmental microbiology*. CRC press.
2. *Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.
3. Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), *Standard methods for the examination of water and wastewater*. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.

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