



## WL Differential Broth

M410

WL Differential Broth is recommended for selective isolation and enumeration of bacteria encountered in breweries and industrial fermentations.

### Composition\*\*

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Yeast extract	4.000
Dextrose	50.000
Monopotassium phosphate	0.550
Potassium chloride	0.425
Calcium chloride	0.125
Magnesium sulphate	0.125
Ferric chloride	0.0025
Manganese sulphate	0.0025
Bromo cresol green	0.022
Actidione (Cycloheximide)	0.004
Final pH ( at 25°C)	5.5±0.2

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

Suspend 60.26 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. If desired, to obtain a pH of 6.5, add 1% solution of sodium bicarbonate.

Warning : Cycloheximide is very toxic. Avoid skin contact or aerosol formation and inhalation.

### Principle And Interpretation

WL (Wallerstein Laboratory) media are formulated as described by Green and Gray for the examination of materials encountered in brewing and for industrial fermentations containing mixed flora of yeast and bacteria (1, 2). Bakers yeast counts can be carried out in this medium at a pH 5.5. By adjusting the pH to 6.5, the medium can be used for obtaining counts of Baker and distillers yeast (3).

WL Differential Broth contains yeast extract, which serves as a source of trace elements, vitamins and amino acids. Casein enzymic hydrolysate is used as a source of nitrogen, amino acids and carbon. Dextrose is the source of carbohydrate. Buffering of the medium is done by monopotassium phosphate. Potassium chloride, calcium chloride and ferric chloride are essential ions that help to maintain the osmotic balance. Magnesium sulphate and manganese sulphate are sources of divalent cations. Bromo cresol green is a pH indicator. Yeasts and moulds in WL differential medium are inhibited by cycloheximide (actidione)

### Quality Control

#### Appearance

Light yellow to light green homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Bluish green coloured very slightly opalescent solution in tubes.

#### Reaction

Reaction of 6.03% w/v aqueous solution at 25°C. pH : 5.5±0.2

#### pH

5.30-5.70

#### Cultural Response

M410: Cultural characteristics observed after an incubation for 40-48 hours at 35-37°C for bacteria and at 30 ± 2°C for yeasts.

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Organism	Inoculum (CFU)	Growth
<b>Cultural Response</b>		
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant
<i>Lactobacillus fermentum</i> ATCC 9338	50-100	good
<i>Proteus mirabilis</i> ATCC 25933	50-100	good
<i>Saccharomyces cerevisiae</i> ATCC 9763	$\geq 10^3$	inhibited
<i>Saccharomyces uvarum</i> ATCC 28098	$\geq 10^3$	inhibited

### Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

### Reference

1. Green S. R. and Gray P. P., 1950, Wallerstein Lab. Commun., 12:43
2. Green S. R. and Gray P. P., 1950, Wallerstein Lab. Commun., 13:357
3. MacFaddin J. F., 1985, Media for Isolation- Cultivation- Identification- Maintenance of Medical Bacteria, Vol.1, Williams & Wilkins, Baltimore, Md. .

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### Disclaimer :

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