



## Wort HiVeg™ Agar

MV129

### Intended Use:

Recommended for the cultivation and enumeration of yeasts.

### Composition\*\*

Ingredients	Gms / Litre
Malt extract	15.000
HiVeg™ peptone	0.780
Maltose	12.750
Dextrin	2.750
Dipotassium hydrogen phosphate	1.000
Ammonium chloride	1.000
Agar	15.000
Final pH ( at 25°C)	4.8±0.2

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

### Directions

Suspend 48.28 grams in 1000 ml purified / distilled water containing 2.35 grams of glycerol. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour in sterile Petri plates.

### Principle And Interpretation

Wort Agar is used for the cultivation, isolation and enumeration of yeast and moulds. According to Rapp (7), addition of certain dyes to Wort Agar allows differentiation between yeast and bacterial colonies. It is particularly well adapted for counting osmophilic yeast in butter, sugar and syrups, in lemonades and more generally in sweet or soft drinks. Wort Agar is a medium equivalent to the medium described by Parfitt (6) and equally suitable for the cultivation and enumeration of yeasts. Parfitt investigated the relative merits of Wort Agar and other media for the count of yeasts and moulds in butter, and recommended the use of dehydrated whey, malt or wort for the purpose. Scarr (8) employed a modified Wort Agar (Osmophilic Agar) for the examination of sugar products for presence of osmophilic yeasts. For more selective utilization, it is possible to adjust the pH to 4.5 or 3.5 by adding 10 ml/l of a 10% solution of lactic acid or tartaric acid before sterilization. Wort HiVeg™ Agar is same as Wort Agar except that the animal based peptones are completely replaced with vegetable peptones to avoid the BSE/TSE risks associated with animal peptones.

Yeasts grow well in culture media containing dextrose or maltose in an acidic environment. In this medium, HiVeg™ peptone and malt extract provide nitrogenous and other nutrients for the growth of yeasts. Dextrin and maltose are the fermentable carbohydrates. The agar medium should not be re-liquified as it causes alteration with hydrolysis of agar at low pH and results in failure of agar to gel when cooled (5).

For the microbiological examination of butter, make suitable dilutions in quarter strength Ringer solution. Transfer 1 ml of each dilution to a separate Petri dish; add 15 ml of melted Wort Agar, cooled to 45-48°C, mix by rotary movements in a horizontal plane. Incubate the plates and subsequently count the colonies.

### Type of specimen

Food and dairy samples; Water samples

### Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,9,10).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(2)

After use, contaminated materials must be sterilized by autoclaving before discarding.

## Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

## Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

Light yellow to brownish yellow homogeneous free flowing powder

### Gelling

Firm, comparable with 1.5% Agar gel.

### Colour and Clarity of prepared medium

Yellow coloured Opalescent gel forms with flocculant precipitate in Petri plates.

### Reaction

Reaction of 4.83% w/v aqueous solution at 25°C. pH : 4.8±0.2

### pH

4.60-5.00

### Cultural Response

Cultural characteristics observed with added glycerol after an incubation at 25-30°C for 40-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
* <i>Aspergillus brasiliensis</i> ATCC 16404 (00053*)	50-100	luxuriant	-
<i>Candida albicans</i> ATCC 10231 (00054*)	50-100	luxuriant	≥70%
<i>Saccharomyces cerevisiae</i> ATCC 9763 (00058*)	50-100	luxuriant	≥70%
<i>Saccharomyces uvarum</i> ATCC 28098	50-100	luxuriant	≥70%

Key : \*Corresponding WDCM numbers.  
# - Formerly known as *Aspergillus niger*

## Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

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## Reference

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4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. MacFaddin J. F., 1985, Media for Isolation-Cultivation- Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
6. Parfitt E. H., 1933, J. Dairy Sci., 19: 141.
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9. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
10. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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