



PRODUCT SPECIFICATION SHEET

Wort Agar (DM295)

Intended Use

Wort Agar (DM295) is recommended for the cultivation and enumeration of yeast.

Product Summary and Explanation

Wort Agar is a general purpose mycological medium, equivalent to the medium described by Parfitt and especially suitable for the cultivation, isolation and enumeration of yeast and moulds. According to Rapp,⁽¹⁾ 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. The medium which duplicates the composition of natural wort, is of an acidity which is optimal for many yeasts but inhibitory to most bacteria. Parfitt⁽²⁾ 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 agar for the purpose. Scarr⁽³⁾ employed a modified wort agar ('osmophilic agar') for the examination of sugar products for 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.

Principles of the Procedure

Wort Agar contains peptic digest of animal tissue and malt extract which provides nitrogenous and other nutrients for the growth of yeasts. Dextrin and maltose are the fermentable carbohydrates which makes the medium acidic. Yeasts grow well in culture media containing dextrose or maltose in an acidic environment. 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.⁽⁴⁾

Formula / Liter

Ingredients	Gms / Liter
Malt extract	15.00
Peptic digest of animal tissue	0.78
Maltose	12.75
Dextrin	2.75
Dipotassium phosphate	1.00
Ammonium chloride	1.00
Agar	15.00
Final pH: 4.8 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 48.28 grams of the medium in one liter of distilled water containing 2.35 grams of glycerol.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. Mix well and pour in sterile Petri plates.





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Quality Control Specifications

Dehydrated Appearance	Light yellow to brownish yellow homogeneous free flowing powder
Prepared Medium	Yellow coloured Opalescent gel forms with flocculant precipitate in Petri plates
Reaction of 4.83% solution	pH 4.8 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

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

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Recovery
1.	<i>Aspergillus brasiliensis</i> ATCC 16404	50-100	good-luxuriant	--
2.	<i>Candida albicans</i> ATCC 10231	50-100	good-luxuriant	≥70%
3.	<i>Saccharomyces cerevisiae</i> ATCC 9763	50-100	good-luxuriant	≥70%
4.	<i>Saccharomyces uvarum</i> ATCC 28098	50-100	good-luxuriant	≥70%

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

- 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.
- For the examination of sugar products for osmophilic yeasts, dissolve dehydrated Wort Agar in a syrup containing 35 parts w/w of sucrose and 10 parts w/w of glucose, and autoclave for 20 minutes at 110 °C. Inoculate and mix as above. Incubate at 27°C for 3±4 days for Schizosaccharomyces species and for 5 days for less common osmophilic yeasts.
- Refer to appropriate references for standard test procedures.

Results

Refer to appropriate references and standard test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10- 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

- For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
- Consult appropriate texts for detailed information and recommended procedures.





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Packaging

Product Name : Wort Agar

Product Code : DM295

Available Pack sizes : 500gm

References

1. Rapp M., 1974, Indikatorzusätze zur Keimdifferentenzierung auf Wurze-und Malzextrakt-Agar, Milchwis, 29: 341-344.
2. Parfitt E. H., 1933, J. Dairy Sci., 19: 141.
3. Scarr M., 1959, J. Sci. Food. Agric., 10 (12), 678-681.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation- Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

Further Information

For further information please contact your local MICROMASTER Representative.



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