



PRODUCT SPECIFICATION SHEET

Lysine Medium Base (DM1086)

Intended Use

Lysine Medium Base (DM1086) is recommended for isolation and enumeration of wild yeast in pitching yeast.

Product Summary and Explanation

Morris and Eddy⁽¹⁾ described this complex medium for the isolation and enumeration of wild yeasts in pitching yeast in the brewery industry. Walters and Thiselton⁽²⁾ examined 180 species of yeasts using a liquid synthetic medium containing lysine as sole nitrogen source. They found that no normal cerevisiae or carlsbergensis strains utilised lysine whereas many other yeasts, including wild yeasts. They kept their stock cultures on malt extract agar slopes or on malt extract chalk agar in the case of Brettanomyces species. Later Morris and Eddy⁽¹⁾ also formulated solid lysine medium. Most of the Saccharomyces strains employed in the brewery industry and other fermentative industries do not use lysine, whereas the wild strains do. Lysine Medium exploits this differential behavior to separate both types of yeasts.

Principles of the Procedure

Lysine Medium Base contains vitamins and trace elements, which is necessary to support metabolic activities of yeast. Lysine acts as the sole source of nitrogen, which is utilized by many types of yeast.

Formula / Liter

Ingredients	Gms / Liter
Dextrose	44.50
Monopotassium phosphate	1.78
Magnesium sulphate	0.89
Calcium chloride	0.178
Sodium chloride	0.089
Adenine	0.00178
DL-Methionine	0.000891
L-Histidine	0.000891
DL-Tryptophan	0.000891
Boric acid	0.0000089
Zinc sulphate	0.0000356
Ammonium molybdate	0.0000178
Manganese sulphate	0.0000356
Ferrous sulphate	0.0002225
L-Lysine	1.00
Inositol	0.02
Calcium pantothenate	0.002
Aneurine	0.0004
Pyridoxine	0.0004
p-Amino benzoic acid (PABA)	0.0002
Nicotinic acid	0.0004
Riboflavin	0.0002
Biotin	0.000002
Folic acid	0.000001
Agar	17.80
Final pH: 5.0 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	



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Precautions

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

Directions

1. Suspend 6.62 grams of the medium in 100 ml of distilled water containing 1 ml of 50% potassium lactate (MS174).
2. Heat to boiling to dissolve the medium completely.
3. DO NOT AUTOCLAVE.
4. Cool to 50°C, adjust pH to 5.0 with 10% lactic acid and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	White to cream homogeneous free flowing powder
Prepared Medium	Colourless to pale yellow, clear to slightly opalescent opalescent gel forms in Petri plates
Reaction of 6.6% solution	pH 7.1 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.78% Agar gel

Expected Cultural Response: Cultural characteristics observed after an incubation at 25-30°C upto 7 days.

Sr. No.	Organisms	Results to be achieved
		Growth
1.	<i>Pichia fermentans</i> ATCC 10651	good-luxuriant

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

Test Procedure

1. Wash and centrifuge the sample of pitching yeast three times with distilled water.
2. Remove 0.2ml of a suspension containing approximately 107 cells per ml and spread with a bent platinum wire, over the surface of a Lysine Medium plate.
3. Incubate at 25-30°C and examine daily for evidence of growth.
4. Count the number of colonies which develop, and express the degree of contamination as the number of wild yeast cells per million cells of the original inoculum.
5. The number of cells in the inoculum is important as it has been shown by Morris & Eddy that small numbers of cells (approximately 100 to 1,000) still grow to a limited extent on the medium.
6. Where the number of brewing yeast cells exceeds approximately 10,000, a count of the colonies developing provides a direct measure of the contamination by wild yeasts.⁽³⁾
7. 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 2 - 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

1. The pitching yeast may grow as a slight background film with the 'wild' yeast appearing as colonies on the film.
2. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
3. Consult appropriate texts for detailed information and recommended procedures.



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Packaging

Product Name : Lysine Medium Base

Product Code : DM1086

Available Pack sizes : 100gm/500gm

References

1. Morris E. O. and Eddy A. A, 1957, J. Inst. Brew. 63(1): 34.
2. Walters L. S. and Thiselton M. R., 1953, J. Inst. Brew. 59:401.
3. Fowell R. R., 1965, J. Appl. Bacteriol., 28:373.

Further Information

For further information please contact your local MICROMASTER Representative.



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