



## Schwarz Differential Medium

M1331

Schwarz Differential Medium is used in the brewing industry for the differentiation of brewing yeasts from wild yeasts.

### Composition\*\*

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.000
Yeast extract	3.000
Malt extract	3.000
Dextrose	10.000
Basic fuchsin	0.470
Sodium sulphite	2.920
Dextrin	0.110
Agar	20.000
Final pH ( at 25°C)	6.9±0.2

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

### Directions

Suspend 44.50 grams in 1000 ml distilled water. Heat to boiling with constant stirring for 15 minutes. DO NOT AUTOCLAVE. Cool to 45°C and pour into sterile plates. Efficacy of the plates can be improved by incubating them to 30°C for 18 hours before use.

Caution: Basic fuchsin is a potential carcinogen and care should be taken to avoid inhalation of the powdered dye and contamination of the skin.

### Principle And Interpretation

Schwarz Differential Medium is recommended for use in the brewing industry for the differentiation of brewing yeasts from wild yeasts (1,2). Malt extract, peptic digest of animal tissue and yeast extract provide necessary nutrients to support the growth of yeasts. Dextrose is the suitable carbohydrate for the growth of yeasts. Sodium sulphite and basic fuchsin inhibit the gram-positive microorganisms.

The prepared plates darken during incubation. Wild yeasts form pink colonies which may be smooth, mucoid or wrinkled. Brewing yeasts forms a thin haze of micro colonies which blend with the colour of the medium.

### Quality Control

#### Appearance

Pinkish purple to Purple coloured homogeneous free flowing powder

#### Gelling

Firm, comparable with 2.0% agar gel.

#### Colour and Clarity of prepared medium

Light pink coloured clear to slightly opalescent gel forms in Petri plates

#### Reaction

Reaction of 4.45% aqueous solution at 25°C. pH : 6.9±0.2

#### pH

6.70-7.10

#### Cultural Response

M1331: Cultural response observed at 30°C for upto 4 days. (colour of plates darkens during incubation).

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
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Cultural Response

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<i>Candida albicans</i> ATCC 10231	50-100	luxuriant	$\geq 50\%$	white to light pink raised colonies
<i>Candida kruisei</i> ATCC 24408	50-100	luxuriant	$\geq 50\%$	pink, rough, flat colonies
<i>Saccharomyces cerevisiae</i> ATCC 9763	50-100	luxuriant	$\geq 50\%$	pink colonies

### 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.L. Jespersen, M. Jakobsen, Specific spoilage organisms in breweries and laboratory media for their detection, Int. J. of Food Microbiol., Vol. 33, 1, p 139-155 (1996).
- 2.A. van der Aa Kühle, L. Jespersen, Detection and identification of wild yeasts in lager breweries, Int. J. of Food Microbiol., Vol. 43, 3, p 205-213 (1998).
- 3.T. Deák, L.R. Beuchat, Handbook of food spoilage yeasts, 2nd Edition (2007)

Revision : 2 / 2015

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