

TECHNICAL DATA SHEET

Urea Agar Base

Principle

Urea agar base is composed of peptone, dextrose, sodium chloride, monobasic potassium phosphate, phenol red and agar. Peptone provides carbon and nitrogen required for the growth of organisms. Dextrose is the energy source. Sodium chloride maintains the osmotic equilibrium and phosphates act as buffering agent. Many urinary tract infections causing organisms, produce urease enzyme, which catalyzes the splitting of urea in the presence of water to release two molecules of ammonia and carbon dioxide. The ammonia combines with the carbon dioxide and water to form ammonium carbonate, which turns the medium alkaline, and change the color of medium from light orange at pH 6.8 to magenta pink at pH 8.1 due to presence of phenol red. Rapid urease-positive organisms turn the entire medium pink within 24 hours.

Use: For the detection of urease production by *Proteus* species and for identification of other members of Enterobacteriaceae

Contents*

Ingredients	Gram/Litre
Peptone	1.000
Dextrose	1.000
Sodium Chloride	5.000
Monobasic Potassium Phosphate	2.000
Phenol Red	0.012
Agar	15.000
pH at 25°C	6.8 ±0.2

*** Formula adjusted for optimum performance and parameters**

Directions: Dissolve 24.00 grams in 950 ml distilled water, boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs. pressure (121 °C) for 15 min, cool it to 42-45 °C and add 50 ml of sterile 40% Urea solution mix well and distribute in sterile test tubes. Slant the tubes to have a small butt and slant, allow to solidify. Ensure complete solidification and inoculate test sample aseptically.

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Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical samples etc.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light orange red colored free flowing, homogeneous powder
Reaction of 2.4% solution	6.8 $\pm$ 0.2 at 25 °C
pH	6.60- 7.00
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Yellow orange colored, clear opalescent gel
Growth Promotion properties	Best at $\leq$ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at $\leq$ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate at 35 $\pm$ 2°C for 18-24 hours.

Organism	ATCC	Inoculum	Growth	Urease test
<i>Proteus mirabilis</i>	12453	50-100	Good	Positive reaction
<i>Escherichia coli</i>	8739	50-100	Good	Negative reaction
<i>Klebsiella aerogenes</i>	13048	50-100	Good	Negative reaction
<i>Salmonella typhimurium</i>	14028	50-100	Good	Negative reaction

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Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.
2. Difco Manual (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.
3. MacFaddin J. F, (1985), Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williamsand Wilkins, Baltimore, Md.

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