



Agar Powder, Certified Principle And Interpretation

CR301

Agar powder, certified is a high-grade agar specially processed for microbiological purposes. It is purified by exhaustively extracting Agar with water and organic solvents to remove all nitrogenous compounds, inorganic salts and vitamins. Low calcium and magnesium level makes it compatible with all culture media. It is routinely used as solidifying agent in microbiological media and also recommended for antimicrobial disc diffusion susceptibility tests. It is a cream coloured powder that forms clear solution when dissolved in boiling water.

Quality Control

Appearance

Cream coloured, homogenous free flowing powder.

Solubility

Freely soluble in hot water at temperatures above 85°C. Insoluble cold water.

Clarity

A firm solid, clear to slightly opalescent gel is formed at a concentration of 1.5% at 34-36°C.

Dye Diffusion

Agar dye diffusion :- 18-20mm

Reaction

Reaction of 1.5% w/v aqueous solution at 25 °C

pH

6.0 - 7.0

Identification test

As per method specified in USP 37, NF32;

A: Infrared absorption.

B: With Iodine, some fragments of agar appear bluish black, with some areas reddish to violet.

C: Agar forms a clear liquid, which congeals at 30 to 39°C to form a firm resilient gel, which does not melt below 80°C.

Microbial Load

Total aerobic microbial count (cfu/gm)

By plate method when incubated at 30-35°C for not less than 3 days.

Total aerobic microbial count : ≤ 1000 CFU/gram

Total Yeast and mould count (cfu/gm)

By plate method when incubated at 20-25°C for not less than 5 days.

Total yeast & mould Count : ≤ 100 CFU/gram

Test for Pathogens

1. *Escherichia coli*-Negative in 10 gms of sample 2. *Salmonella* species-Negative in 10 gms of sample 3. *Pseudomonas aeruginosa*-Negative in 10 gms of sample 4. *Staphylococcus aureus*- Negative in 10 gms of sample 5. *Candida albicans*- Negative in 10 gms of sample 6. *Clostridia*- Negative in 10 gms of sample

Test for Water absorption

As per method specified in USP 37, NF32 NMT 75 ml of water is absorbed by 5.0 g of agar

Test for Gelatin

As per method specified in USP 37, NF32 No formation of yellow precipitate

Test for Starch

As per method specified in USP 37, NF32 No Formation of blue colour on addition of iodine

Growth Promotion Test

As per method specified in USP 37, NF32

Chemical Analysis

Gelling temperature

34-36°C

Melting range

≥85°C

Total Nitrogen

<= 0.125%

Water(KF)

<=20%

Total ash

<=6.5%

Magnesium(Mg)

<= 0.1%

Calcium

<= 0.1%

Heavy metals (as Pb)

<= 40 ppm

Lead

<= 10 ppm

Arsenic(As)

<= 3 ppm

Iron(Fe)

<= 0.018%

Acid insoluble matter (on dry basis)

<=0.5%

Foreign organic matter

<=1.0%

Foreign insoluble matter

<=15 mg in 7.5 gm of Agar

Cultural Response

Cultural response observed after an incubation at 35-37°C for 18-24 hours by preparing Nutrient Agar (M001) using Agar Powder, Extra pure as an ingredient.

Organism**Growth***Escherichia coli* ATCC 25922

Luxuriant

Pseudomonas aeruginosa ATCC 27853

Luxuriant

Staphylococcus aureus ATCC 25923

Luxuriant

Salmonella Typhi ATCC 6539

Luxuriant

Streptococcus pyogenes ATCC 19615

Luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and away from bright light. Use before expiry date on label. On opening, product should be properly stored in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use.

Disclaimer :

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