



Agar Agar Type I

GRM666

Principle And Interpretation

Agar Agar Type I is produced for use in bacteriological routine laboratory work, plant tissue culture media, pharmaceutical preparations, where clarity, compatibility are not of prime importance. When suspended in cold water, it swells but does not dissolve. However, it readily dissolves in boiling water and solubility is facilitated by soaking the powder in cold 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 38-41°C.

Dye Diffusion

Agar dye diffusion :- 18-20mm

Reaction

Reaction of 1% 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.

Bacterial Count : \leq 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.

Yeast & mould Count : \leq 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

Chemical Analysis

Gelling temperature

38-41°C

Melting range

\geq 85°C

Total Nitrogen

\leq 0.125%

Water(KF)

\leq 20%

Total ash

\leq 6.5%

Heavy metals (as Pb)

<= 40 ppm

Lead

<= 10 ppm

Arsenic(As)

<= 3 ppm

Acid insoluble matter (on dry basis)

<=0.5%

Foreign organic matter

<=1.0%

Foreign insoluble matter

<=15 mg in 7.5 gm of Agar

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

Cultural response

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

Cultural Response

Organism	Growth
<i>Escherichia coli</i> ATCC 25922	Luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853	Luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	Luxuriant
<i>Salmonella</i> Typhi ATCC 6539	Luxuriant
<i>Streptococcus pyogenes</i> ATCC 19615	Luxuriant

Storage and Shelf Life

Store below 30°C. Use before expiry date on the label.

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