



# Technical Data

## Agar powder, Bacteriological Grade

GRM026

Agar Powder is specifically produced for use in bacteriological culture media and plant tissue culture media, where clarity and compatibility are not of prime importance. It is used in culture media in following concentrations : For Routine Media: 1.4 to 1.6% ,For Soft Media: 0.5% ,For Semi-solid Media: 0.15%, For Media with Reduced Oxygen Tension: 0.05 - 0.1% ,For Extra Hard Gels, for inhibiting swarming of Proteus species: 2.5% - 3.0%

### Principle And Interpretation

Agar is prepared from species of red seaweeds specially selected for their Agar gel production, using stainless steel equipment, observing good manufacturing practice. It is a Bacteriological grade powder with high mineral / metal content and is advantageous to use in certain media. It is a cream coloured powder having particle size that can pass through 40 ASTM Screen. 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 powder. 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 38-40°C.

#### Dye Diffusion

Agar dye diffusion :- 18-20mm

#### Reaction

Reaction of 1.5% w/v aqueous solution at 25 °C  
pH : 6.50 - 7.50

#### 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 : <= 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 : <= 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

38-40°C

##### Melting temperature

>=85°C

##### Water(KF)

<=20%

**Calcium**

&lt;= 0.1%

**Heavy metals (as Pb)**

&lt;= 40 ppm

**Lead**

&lt;=10 ppm

**Arsenic(As)**

&lt;=3 ppm

**Sulphated ash**

&lt;=6.5%

**Acid insoluble Matter (on dry basis)**

&lt;=0.5%

**Foreign organic matter**

&lt;=1.0%

**Foreign insoluble matter**

&lt;=15 mg in 7.5 gm of Agar

**Gelling Strength**>= 800 g/cm<sup>2</sup>**Test for Water absorption**

As per method specified in USP 37,NF 32, NMT 75 ml of water is absorbed by 5.0 g of agar

**Test for Gelatin**

As per method specified in USP 37,NF 32, No formation of yellow precipitate

**Test for Starch**

As per method specified in USP 37,NF 32 ,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, Bacteriological 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.

**Disclaimer :**

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