



Agar-Agar | AS-1001

A solidifying agent, free of impurities, used in culture media

Agar-agar is a refined polymer driven from red algae. It is necessary for solidifying culture media in microbiology labs. Compared to gelatin, agar-agar is free of impurities and offers several advantages.

Agar-agar dissolves easily in boiling water but is insoluble in cold water. Significantly, it solidifies between 32 to 40°C, which is the ideal temperature range for bacterial growth and keeps its firmness at temperatures that are commonly used for bacterial cultivation. Agar-agar culture medium is extremely resistant to being broken down by enzymes released by a variety of microbes. This allows appropriate bacterial growth and ensures the integrity of the culture media.

Depending on the intended use, the agar-agar concentration in culture media can be changed.

To achieve the best solidification, bacterial culture media typically employ a concentration of 1–1.5%.

For motility experiments, a lower concentration of about 0.5% is utilized, enabling bacteria to travel through the gel more easily.

Certain anaerobic bacteria, which might be sensitive to a stricter environment, can be cultured at very low agar concentrations like 0.1%.

It's crucial to remember that the acidity (pH) of the culture medium can have an impact on the gelling qualities of agar-agar. It may be essential to use a slightly larger concentration of agar (at least 2%) to achieve adequate solidification for pH values lower than 5.

Typical analysis

Powder appearance	Cream, free flowing powder
solution appearance	Light amber, clear
pH (5% in water)	5.0-6.0
Loss on Drying	<12%
Heavy metals (like Pb)	0.0005%
Mg	0.1%
Ca	0.5%
Solidification temperature	32-40 °C
Melting Point	>85 °C

Microbial Quality Control

Cultural response after 18-24 hours incubation at 35-37 °C on Nutrient Agar prepared with agar-agar powder as solidifying agent.

Organism	ATCC	Growth
<i>Escherichia Coli</i>	29922	Luxuriant
<i>Pseudomonas aeruginosa</i>	27853	Luxuriant
<i>Staphylococcus aureus</i>	25923	Luxuriant
<i>Salmonella Typhi</i>	14028	Luxuriant
<i>Streptococcus pyogenes</i>	19615	Luxuriant

Shelf life and storage

Store below 30 °C in a tightly closed container. Keep away from heat and humidity. Under these conditions agar-agar has a shelf life of 5 years from the date of production.