

Technical Specification Sheet



Agar, Technical SKU: 700003497, 700003498, 700003499, 700003500 NCM0205

Intended Use

Agar, Technical is a solidifying agent for use in preparing microbiological culture media in a laboratory setting. Agar, Technical is not intended for use in the diagnosis of disease or other conditions in humans. Conforms to US Pharmacopeia (USP).

Description

Agar is a phycocolloid extracted from a group of red-purple algae, usually *Gelidium* spp. Agar was first suggested for microbiological purposes in 1881 by Fannie Hesse. By the early 1900's, agar became the gelling agent of choice over gelatin because agar remains firm at growth temperatures for many pathogens and agar is generally resistant to a breakdown by bacterial enzymes. The use of agar in microbiological media significantly contributed to the advance of microbiology, paving the way to study pure cultures.

Agar is a gel at room temperature, remaining firm at temperatures as high as 65°C. Agar melts at approximately 85 - 91°C, a different temperature from solidification at 34 - 36°C. This property is known as hysteresis. Agar is generally resistant to shear forces; however, different agar may have different gel strengths or degrees of stiffness.

Specifications for Agar, Technical include good clarity, controlled gelation temperature, controlled melting temperature, good diffusion characteristics, absence of toxic bacterial inhibitors, and relative absence of metabolically useful minerals and compounds. Agar, Technical is recommended as a general purpose agar for preparing microbiological culture media.

Precaution

Refer to SDS

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free-flowing and off-white to cream.

Prepared Appearance (1.5% wt/vol): Prepared medium is very pale off-white to pale yellow and trace hazy to hazy.

CAS #: 9002-18-0

pH (2% Solution at 25°C): 6.0 - 7.5

Gel Strength (1.5%, Nikan Method): 700-1100 g/cm²

Gel Point (1.5%): 34 - 38°C

Moisture: ≤ 12%

Ash: ≤ 5%

Melting Point: 85 - 90°C



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Expected Culture Response: Cultural response on Cetrimide Agar (NCM0109) after aerobic incubation at $35 \pm 2^\circ\text{C}$ for 18 – 24 hours.

Microorganism	Approx. Inoculum (CFU)	Expected Growth
<i>Escherichia coli</i> ATCC® 25922	10 - 300	Inhibited
<i>Pseudomonas aeruginosa</i> ATCC® 27853	10 - 300	Fair to good growth

Test Procedure

Refer to appropriate references for specific procedures using Agar, Technical.

Results

Refer to appropriate references for test results.

Expiration

Refer to expiration date stamped on the container. The product should be discarded if it is not free flowing, or if medium has changed from the original color. Expiry applies to product in its intact container when stored as directed.

Storage

Store product at 2-30°C away from direct sunlight. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

1. United States Pharmacopeia National Formulary 2018: USP 41 NF 35
2. Chapters 61, 62, 111. The United States Pharmacopeial Convention, Rockville, MD.
3. Hesse, W. 1894. Über die quantitative Bestimmung der in der Luft enthaltenen Mikroorganismen. Mit. a.d. Kaiserl. Gesh. Berlin. 2: 182-207.
4. Hitchens, A. P., and M. C. Leiking. 1939. The introduction of agar-agar into bacteriology. J. Bacteriol. 37:485-493.
5. Selby, H. H., and T. A. Selby. 1959. Agar. In Whister (ed.). Industrial gums, Academic Press Inc., New York, N. Y.

