

# Technical Specification Sheet



## Agar, Bacteriological (American Type) No.1 SKU: 700003530, 700003531, 700003532, 700003533 NCM0214

### Intended Use

Agar, Bacteriological (American Type) No. 1 is a solidifying agent for use in preparing microbiological culture media in a laboratory setting. Agar, Bacteriological (American Type) No. 1 is not intended for use in the diagnosis of disease or other conditions in humans. Agar, Bacteriological (American Type) No. 1 conforms with the testing specified in the USP/EP Pharmacopeia.

### 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 temperature 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, Bacteriological (American Type) No. 1 include good clarity, controlled gelation temperature, controlled melting temperature, good diffusion characteristics, absence of toxic bacterial inhibitors, and relative absence metabolically useful minerals and compounds. Agar, Bacteriological (American Type) No. 1 is recommended for clinical applications, auxotrophic studies, bacterial and yeast transformation studies, and bacterial molecular genetics applications.

### Precaution

Refer to SDS

### Quality Control Specifications

**Dehydrated Appearance:** Powder is homogeneous, free-flowing and creamy-white to beige.

### **Specification:**

CAS #:	9002-18-0
Loss on Drying:	10% Maximum
Ash:	3.5% or less
Acid insoluble ashes:	<0.5%
Gelatin	Passes test
Starch	Passes test
Foreign organic matter	<1.0%
Foreign inorganic matter	<1.0%
Water absorption	<75 ml



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**Prepared Appearance (1.5% wt/vol):** Prepared medium is colorless to light yellow and slightly hazy to hazy.

Color:	Colorless to light yellow
Clarity:	Slight hazy to hazy
Gel Point (1.5%)	34-36°C
Melting Point	85-95°C
pH:	6.0-7.5

**Expected Culture Response:** Cultural response in Peptone Agar after incubation at 35 ± 2°C and examined for growth after 18 – 24 hours incubation.

<u>Microorganism</u>	<u>Approx. Inoculum (CFU)</u>	<u>Expected Growth</u>
<i>Escherichia coli</i> ATCC® 25922	10 - 300	Good to excellent growth
<i>Staphylococcus aureus</i> ATCC® 25923	10 - 300	Fair to good growth
<i>Streptococcus pyogenes</i> ATCC® 19615	10 - 300	Poor to fair growth

**Toxicity Test:**

A test was performed on Tryptic Soy Agar using *Neisseria meningitidis* as the indicator strain.

<u>Specification</u>	<u>Expected Results</u>
Toxicity Test	Non-Toxic

**Test Procedure**

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

**Results**

Refer to appropriate references for test results.

**Expiration**

Refer to expiration date stamped on container. Product should be discarded if not free flowing or if the appearance 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.



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## References

1. European Pharmacopoeia 9<sup>th</sup> Edition (2017)
2. United States Pharmacopeia National Formulary 2018: USP 41 NF 35
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.
6. Sambrook, J., E. F. Fritsch, and T. Maniatis. 1989. Molecular cloning, a laboratory manual, 2nd ed. Cold Spring Harbor Laboratory Press, New York, N. Y.
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