

## Technical Data Sheet

# Tryptic Soy Agar

Ordering number: 1.46375.0006

Tryptic Soy Agar is a complex growth medium, used for the cultivation of a wide variety of microorganisms. Hence, this media is suitable for a large range of applications, including cultivation, maintenance of stock culture and total aerobic microbial count.

Tryptic Soy Agar is suitable for cultivation and isolation of fastidious bacteria, yeasts and fungi. This universal agar displays a wide application range, including phage and colicin typing, X- and V-factor tests and geno- and electrotyping (e.g. pulsed-field gel electrophoresis). TSA agar is applied especially for determination of bacterial contamination of cosmetics, drinking water and wastewater.

The formulation of the basic medium (Soybean-Casein Digest Agar) is prepared according to the recommendations of the current European, Japanese and United States Pharmacopoeia (EP, 2.6.13.; JP, 4.05 and USP, 62).

Tryptic Soy Agar (TSA) is available with identical media formulation in different filling volumes:

- Tryptic Soy Agar Slant Tubes (article number 146271): 17 ml **tubes**, filling volume 6 ml
- Tryptic Soy Agar (article number 146429): 25 ml **tubes**, filling volume 18 ml
- Tryptic Soy Agar (article number 146457): 250 ml bottles with **screw cap**, filling volume 200 ml
- Tryptic Soy Agar (article number 146375): 500 ml bottles with **screw cap**, filling volume 400 ml

### Mode of Action

Tryptic Soy Agar (TSA) is a complex medium for cultivation and isolation of a wide range of bacteria, yeasts and molds. This medium contains several peptones, providing amino acids and polypeptides to ensure growth of a variety of microorganisms. Sodium chloride maintains osmotic equilibrium in the medium.

## Typical Composition

Casein Peptone	15 g/l
Soy Peptone	5 g/l
NaCl	5 g/l
Agar	15 g/l

The appearance of the medium is clear and yellowish. The pH value is in the range of 7.1-7.5. The medium can be adjusted and/or supplemented according to the performance criteria required.

## Application and Interpretation

Tryptic Soy Agar, provided in tube or bottle, can be used to prepare plates for surface spread or for pour plate method.

Prior to use, melt the agar using a 95°C water bath or an autoclave. **Slightly open the screw cap in order to avoid pressure building before heating the media. Please note that use of a microwave is not advised.**

Melting time differs significantly based on the volume of the medium - around 10 minutes for tubes, 45 minutes for 200ml agar and 60 minutes for 400ml agar. Once the agar is liquefied, allow the media to cool down in a 45-50°C water bath. The cooling times correlate with the respective heating times of the different volumes of agar. When pouring, media should not exceed a temperature of 45°C.

For surface inoculation, pour the liquid medium into an empty petri dish (volume will depend on the diameter of the petri dish, i.e. ~15-20ml for 90mm plates). Once the agar is solidified, the plates should be wrapped, stored at cold temperature and used within few days.

For the pour plate method, add the prepared sample into the empty dish and cover with medium. Gently mix the plate and allow the agar to solidify prior to incubation.

For total aerobic bacterial count, plates should be incubated for 3 to 5 days at 30-35 °C (EP/USP) prior to colony counting.

Tryptic Soy Agar in slant is used for cultivation and conservation of bacterial cultures. After streaking a strain, the tube can be incubated with slightly loose cap to allow aeration.

Note: Agar media should not be melted a second time after solidifying

## Storage and Shelf Life

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at 2 °C to +25 °C.

The testing procedures as described on the CoA can be started up to the expiry date printed on the label.

## Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 °C, disinfect, incinerate etc.).



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## Quality Control

Control Strains	ATCC #	Inoculum CFU	Incubation	Expected Result Recovery in %
<i>Pseudomonas aeruginosa</i>	9027	10-100	20-24 h at 33-35 °C	70-200 %
<i>Bacillus subtilis</i>	6633	10-100	20-24 h at 33-35 °C	70-200 %
<i>Candida albicans</i>	10231	10-100	20-24 h at 33-35 °C	70-200 %
<i>Aspergillus brasiliensis</i>	16404	10-100	44-48 h at 33-35 °C	70-200 %
<i>Staphylococcus aureus</i>	6538	10 -100	20-24 h at 33-35 °C	70-200 %
<i>Escherichia coli</i>	8739	10 -100	20-24 h at 33-35 °C	70-200 %

Please refer to the actual batch related Certificate of Analysis.

## Literature

European Pharmacopoeia 8.0 (2014): 2.6.12. Microbial examination of non-sterile products (total viable aerobic count); 2.6.13. Microbiological examination of non-sterile products (test for specified micro-organisms)

Japanese Pharmacopoeia 16<sup>th</sup> edition (2011): 4.05 Microbial Limit Test.

MacFaddin, J.F. (1985). Media for isolation-cultivation- identification-maintenance of medical bacteria, vol. 1, Williams & Wilkins, Baltimore.

United States Pharmacopoeia 38 NF 33 (2015): <61> Microbiological Examination of Non-Sterile Products: Microbial Enumeration Tests; <62> Microbiological Examination of Non-Sterile Products: Test for Specified Microorganisms.

## Ordering Information

Product	Cat. No.	Pack size
Tryptic Soy Agar Slant Tubes	1.46271.0020	20 x 6 ml tubes
Tryptic Soy Agar	1.46429.0020	20 x 18 ml tubes
Tryptic Soy Agar	1.46429.0100	100 x 18 ml tubes
Tryptic Soy Agar	1.46457.0006	6 x 200 ml bottles
Tryptic Soy Agar	1.46375.0006	6 x 400 ml bottles
ReadyPlate™ Tryptic Soy Agar acc. ISO, FDA-BAM and EP + USP	1.46431.0020	20 x 90 mm plates
ReadyPlate™ Tryptic Soy Agar acc. ISO, FDA-BAM and EP + USP	1.46431.0100	100 x 90 mm plates

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