

## Product Information

### 17257 *Streptococcus thermophilus* Isolation Agar

For determining the ratio of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* in yoghurt.

#### Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	10.0
Yeast extract	5.0
Sucrose	10.0
Dipotassium phosphate	2.0
Agar	15.0

Final pH 6.8 +/- 0.2 at 25°C

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

#### Directions:

Suspend 42 g in 1 litre distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes.

#### Principle and Interpretation:

*Streptococcus thermophilus* Isolation Agar is based on the formulation originally developed by Lee et al (1) and is subsequently recommended by APHA (2) for isolation and determination of ratio of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* in yoghurt. Both these species are essential in fermentation of milk - yoghurt and are active in a symbiotic relationship. Dominance of either species can cause defects in the yoghurt affecting its consistency, flavour and odour etc. Equal numbers of both the species produce desirable yoghurt. This medium contains sucrose, which is not fermented by the majority of the *Lactobacillus bulgaricus* strains but is readily utilized by *Streptococcus thermophilus*. However if lactose is incorporated in this medium it is utilized by both the species. With a suitable combination of sucrose and lactose, the rate of acid production by *Streptococcus thermophilus* is enhanced while that of *Lactobacillus bulgaricus* is restricted. However later on Driessen et al (3) reported two separate media to enumerate cocci and rods respectively from mixed cultures where *Streptococcus thermophilus* is grown on *Streptococcus thermophilus* Agar (ST Agar) and *Lactobacillus bulgaricus* is cultivated on LB Agar. Casein enzymic hydrolysate and yeast extract provide nitrogenous nutrients, vitamin B complex and trace elements for the growth of *Streptococcus thermophilus*. Dipotassium phosphate prevents pH imbalance in the medium.

Cultural characteristics after 48-72 hours at 35-37°C.

Organisms (ATCC)	Growth
<i>Streptococcus Thermophilus</i> (14486)	+++
<i>Lactobacillus bulgaricus</i> (11842)	+++

#### References:

1. S.Y. Lee, E.R. Vedamuthu, C.J. Washam, G.W. Reinhold, J. Milk Food Technol., 37, 272 (1974)
2. C. Vanderzant, D. Splittstoesser (Eds.), Compendium of Methods for the Microbiological Examination of Food, 3<sup>rd</sup> ed., APHA, Washington, D.C. (1992)
3. F.M. Driessen, J. Ubbels, J. Stadhouders, Biotechnol. Bioeng., 19, 821 (1977)