Reference: 303532ZA **Technical Data Sheet**

Product: **M17 AGAR**

Specification

Solid selective medium for the enumeration of *Streptococcus thermophilus* in yoghurt samples.

Presentation

	Packaging Details	Shelf Life	Storage
10 Prepared bottle Bottle 125 ml with: 100 ± 3 ml	1 box with 10 bottles 125 ml. Plastic screw inner cap.	12 months	8-25 ºC

Composition

Composition (g/l):

Tryptone	2.50
Meat peptone	2.50
Soya peptone	5.00
Yeast extract	2.50
Meat extract	5.00
Sodium ß-glycerophosphate	19.00
Magnesium sulfate	0.25
Ascorbic acid	0.50
Lactose	5.00
Agar	15.00

Description /Technique

Description:

M-17 Agar was developed by Terzaghi and Sandine for detecting lactic streptococci and their bacteriophages in the dairy industry, but later, Shankar and Davies proved its efficacy for the selective isolation of *Streptococcus thermophilus i*n yoghurt.
The effectiveness of the medium is due to its great buffering capacity, facilitating the growth of streptococci while the high concentration of ß-glycerophosphate inhibits the growth of lactobacilli.

Technique:

To use, the contents of the bottle should be poured into plates. The melting of the culture medium should be carried out according to the manufacturer's instructions. Melt in a water (100 ºC). Never apply direct heat to melt a medium. The melting temperatures and times depend on the shape of the container, the volume of medium and the heat source. Before melting any medium loosen the screwcap of the container to avoid breaking the container. The medium should be melted only once and used. Media with agar should not be melted repeatedly as their characteristics change with each remelting. Overheating should be avoided as much as prolonged heating, especially with regard to media with an acidic or alkaline pH. Once melted pour the plates using aseptic techniques.

The recommended technique for enumeration of streptococci is the spread plate or pour plate technique, in the latter molten agar is cooled to about 50-55 ° C before adding the sample, and for both, a 24-hour incubation at 42 ° C is carried out. If the inoculation plate is on the surface, the incubation should be in an atmosphere of 10% CO2.
Almost all the colonies that appear in these conditions are streptococci. The ISO standard recommends longer incubation times or lower temperatures, this can cause morphological differences in the colonies that hinder their recognition, however a greater recovery is obtained.
The exact technique of microbiological control, can be found by referring to ISO standards.

Note: The solid mediums can be melted in different ways: autoclave, bath and, if the customer considers appropriate, also the microwave. Whenever the microwave option is chosen, it is necessary to take certain safety measures to avoid breaking of the containers, such as loosening the screw cap and putting the bottle or tube in a water bath in the microwave. The fusion temperature and time will depend on the shape of the container, the volume of medium and the heat source. Avoid overheating as both the heating periods.

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Quality control

Physical/Chemical control

Color : Brownish pH: 6.8 ± 0.2 at 25ºC

Microbiological control

Melt Medium - Prepare Plates - Spiral Spreading: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)

Microbiological control according to ISO 11133:2014/A1:2018.

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Atmosphere 5%CO2 Incubation at 37 ± 1 ºC Reading at 48h-3 day

Microorganism	Growth
Lactobacillus bulgaricus ATCC® 11842, WDCM 00102	Inhibited - poor
Str. thermophilus ATCC® 19258, WDCM 00134	Good

Sterility Control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

Bibliography

·ISO 7889:2003(E) IDF 117:2003 (E) Yogourt- Enumeration of characteristic microrganisms- Colony-count technique at 37ºC.
·ISO 9232:2003(E) IDF 146:2003 (E) Yogourt- Identificcation of characteristic microorganisms (lactobacillus delbruckii subsp. bulgaricus and Streptococcus thermophilus).
·TERAGAZHI, B.E. y SANDINE, W.E. (1975) Improved medium for lactic streptococcaceae phages from cheese factories. Appl. Environm. Microbiol 29:80, 29:807.
·SHANKAR, P.A. y DAVIES, F.L. (1977) Selective Technique for Iogurt Bacteria Enumeration. J. Soc. Dairy Technol. 30:28 CeNAN. (1982) Técnicas para el Analisis Microbiológico de Alimentos y Bebidas. Madrid.
·VANDERZANT & SPLITTSTOESSER (1992) Compendium of Methods for the Microbiological Examination of Foods.3rd. Ed. APHA. Washington. , ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.