Product :
LETHEEN MODIFIED BROTH

Specification

FDA recommends liquid medium for the primary recovery of stressed microorganisms in the microbial examination of cosmetics.

Formula * in g/L

Casein peptone..... 5.00
Meat peptone..... 20.00
Meat extract..... 5.00
Yeast extract..... 2.00
Sodium chloride..... 5,00
Lecithin..... 0.70
Sodium bisulfite..... 0.10

Final pH 7,2 ±0,2 at 25 ºC

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Dissolve 37,8 g of the powder in 1 L of distilled water with 5 mL of Polysorbate 80 (Art. No. TW0080). Distribute in suitable containers and autoclave at 121ºC for 15 minutes.

Description

In the early 40's, Weber and Black recommended the use of lecithin and polysorbates to neutralize the antimicrobial action of the Quaternary Ammonium Compounds (QAC's).

In 1965 the methodology was accepted by the AOAC for antimicrobial assays and extends their use to all the cationic surfactants (detergents). The TAT (Tryptone-Azolectin-Polysorbate) medium, in the Newburger Cosmetic Analysis Manual, (2nd ed., 1977) is similar in composition and uses the AOAC formulation. In 1978 the FDA (Bacteriological Analytical Manual, 5th edition, 1978) incorporated it as a primary presumptive and enrichment medium for all microbial examination of cosmetics.

The present formulation appears in the 8th edition (1998) of the BAM and the notable modification are the inclusion of sodium chloride providing suitable osmotic pressure and an increased amount of peptones and tissue extracts to promote good growth, these transform this medium into a very rich all-purpose medium suitable for neutralizing almost all preservatives presents in samples under examination.

The ISO Technical Committee on Cosmetics (ISO/TC 217) (2006) has also adopted the present formulation as an alternative enrichment medium prior to microbiological examination but ideally Eugon LT100 Broth should be employed for this. (Art. No. 02-654).

Quality control

Incubation temperature: 30-35ºC **Incubation time:** 24-48 h

Inoculum: Practical range 100 ± 20 CFU. Min. 50 CFU (Productivity) according to ISO 11133:2014/Amd 1:2018 .

Microorganism	Growth	Remarks
Bacillus subtilis ATCC® 6633	Good	-
Staphylococcus aureus ATCC® 6538	Good	-
Escherichia coli ATCC® 8739	Good	-
Pseudomonas aeruginosa ATCC® 9027	Good	-
Aspergillus brasiliensis ATCC® 16404	Good	-
Candida albicans ATCC® 10231	Good	-

References

· ASTM Standard E 640-78 (1991) Test Method for the preservatives in water-containing cosmetics. Philadelphia. PA. USA.
· ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
· FDA (Food and Drug Adminstrations) (1998) Bacteriological Analytical Manual 8th ed. Revision A. AOAC International. Gaithersburg. MD. USA.
· HORWITZ, W. (2000) Official Methods of Analysis. AOAC International. Gaithersburg. MD. USA.
. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
· ISO 18415 Standard (2017) Cosmetics - Microbiology - Detection of specified and non-specified microorganisms.
· ISO 18416 Standard (2015) Cosmetics - Microbiology - Detection of Candida albicans.
· ISO 21149 Standard (2017) Cosmetics - Microbiology - Enumeration and detection of aerobic mesophilic bacteria.
· ISO 21150 Standard (2015) Cosmetics - Microbiology - Detection of Escherichia coli.
· ISO 22717 Standard (2015) Cosmetics - Microbiology - Detection of Pseudomonas aeuruginosa.
· ISO 22718 Standard (2015) . Cosmetics - Microbiology - Detection of Staphylococcus aureus.
· LUCAS, I.P. (1977) Microbiological Examination of Cosmetics. Newburger's Manual of Cosmetic Analysis AOAC. Washington.
· USP 33 - NF 28 (2011) <61> Microbial Limit Tests. 25th ed. US Pharmacopeial Convention. Rockville. MD. USA.
· WEBER, G.R. & L.A. BLACK (1948) Relative efficiency of quaternary inhibitors. Soap and Sanit. Chem. 24:134-139.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).