

# TECHNICAL DATA SHEET

Article No. 9881

Lethen Modified Broth, ready-to-use culture medium, bottles

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## SYNONYMS

Lethen Broth with Tween, Modified

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## SPECIFICATION

Prepared medium. Liquid medium for the primary recovery of stressed microorganisms in the microbial examination of cosmetics according to FDA and ISO.

Colour: Yellowish-brown  
pH: 7,2 ± 0,2 at 25 °C

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## COMPOSITION IN G/ L

Casein peptone	15.0
Meat peptone	10.0
Meat extract	5.0
Yeast extract	2.0
Lecithin	0.7
Sodium chloride	5.0
Polysorbate 80	5.0
Sodium bisulfite	0.1

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## PACKAGE DETAILS

### 9881-10x90ML

Volume 90 ± 3 ml  
Bottle size 125 ml  
Packaging unit 10 bottles

1 box with 10 x 90 ml in 125-ml-bottles. Injectable cap: Plastic screw inner cap + protective outer blue cap. For the use of syringe needles with a diameter ≤ 0.8 mm.



**9881-10x450ML**

Volume	450 ± 5 ml
Bottle size	500 ml
Packaging unit	10 bottles

1 box with 10 x 450 ml in 500-ml-bottles. Injectable cap: Plastic screw inner cap + protective outer blue cap. For the use of syringe needles with a diameter ≤ 0.8 mm.

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**DESCRIPTION**

The use of lecithin and polysorbates to neutralise the antimicrobial effect of quaternary ammonium compounds (QACs) originates from the recommendation of Weber and Black in the 1940s.

The AOAC accepted the methodology for antimicrobial testing in 1965 and extended its application to all cationic surfactants (detergents). The TAT (tryptone azolectin polysorbate) medium in the Newburg Cosmetic Analysis Manual (2nd edition, 1977) has a similar composition and uses the AOAC formulation. The FDA (Bacteriological Analytical Manual, 5th edition, 1978) has included it as the primary presumptive and enrichment medium used for all microbial testing 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 the medium into a very rich all-purpose medium suitable for neutralizing almost all preservatives present 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.

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**TECHNIQUE**

Collect, dilute and prepare samples and volumes as required according to specifications, directives, official standard regulations and/or expected results. Dispense liquid medium in appropriate containers if the original container is of large volume.

Inoculate aseptically the bottles/tubes with the prepared sample or its dilution.

Incubate the tubes tightly closed aerobically at 30-35 °C for 24-48-72 h

(Incubation times, temperature and sample volumes may vary depending on sample and specifications)

Read turbidity increase as growth indicator.

This medium may be used to inoculate any confirmatory, secondary medium by streaking methodology or by spiral method; after proper incubation, enumerate all colonies that have appeared on the surface of the secondary agar.

Evaluation of results according to the laboratory's specifications.

Calculate total microbial count per ml of sample by multiplying the average number of colonies per plate by the inverse dilution factor (in case of streaked diluted sample). Report results as colony forming Unit (CFU's) per ml or along with enrichment and secondary media used, incubation time and temperature.

## MICROBIOLOGICAL CONTROL

Prepare tubes - inoculate with 100±20 CFU for growth promotion or 10<sup>4</sup>-10<sup>6</sup> CFU (selectivity).  
Aerobiosis. Incubation at 30-35 °C. Reading after 24-48h until 72 h

Microorganism	Growth
<i>Escherichia coli</i> ATCC® 25922, WDCM 00013	Good
<i>Ps. aeruginosa</i> ATCC® 9027, WDCM 00026	Good
<i>Staphylococcus aureus</i> ATCC® 6538, WDCM 00032	Good
<i>Bacillus subtilis</i> ATCC® 6633, WDCM 00003	Good
<i>Salmonella typhimurium</i> ATCC® 14028, WDCM 00031	Good

### Sterility control:

Incubation 48 hours at 30-35 °C and 48 hours at 20-25 °C: NO GROWTH.  
Check 7 days after incubation under same conditions.

## 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 Administrations) (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 16212 Standard (2017) Cosmetics - Microbiology - Enumeration of yeast and mould.
- 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 aeruginosa*.
- 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.
- US PHARMACOPOEIA (2002) <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.



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## STORAGE

8 - 25 °C

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## SHELF LIFE

16 months unopened from date of manufacture

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created: 19.08.2022

