Water analysis

Methods and materials according to:

ISO 6222:1999 • ISO 9308-1:2017 • ISO 7899-2:2000 • ISO 14189 • ISO 16266:2006

WHO ARE WE

Il marchio italiano sinonimo di qualità e innovazione nel rispetto dell'ambiente.

Founded in 1988 and located near Venice, **Biosigma S.p.A.** is today a reference point in the production of materials and instruments for microbiology and molecular biology.

With more than 12,000 m^2 of production facilities, two clean rooms and a state-of-the-art machine park, the company guarantees high quality standards in compliance with the strictest international regulations.

Although mainly known for the production of plastic materials, the company offers a much broader range of products. In the field of microbiological quality control, it provides a comprehensive catalogue: culture media, bacterial strains for performance verification, consumables, and instruments required to complete the entire analytical process.

To further strengthen its commitment to microbiological safety, Biosigma has developed a product line entirely dedicated to the monitoring of microbiological water quality control, offering a complete range of solutions in compliance with industry reference ISO standards.

Our contribution to the microbiological control of water
Water, especially when intended for human consumption, is a vital resource and must be guaranteed safe for cunsomers. In the field of microbiology, water quality is monitored through analytical procedures as described in standardised methods adopted at the European Comunity level.
These methods evaluate the effectiveness the treatments applied to ensure water safety.

For this reason, in line with these methods, Biosigma has developed a structured offering that includes:

- **Diluents and culture media**, both dehydrated and ready-to-use, produced in compliance with **ISO 11133:2020**;
- **RM bacterial strains** to verify the productivity and selectivity of culture media, supplied by a manufacturer accredited to **ISO 17034:2017**;
- **Filter membranes** produced in accordance with **ISO 7704:2023**;
- **Consumables and instruments** in line with the requirements of **the Standards referenced in this brochure.**

This product line is designed to meet the full range of needs of laboratories performing microbiological analysis of water.

The value of choosing Biosigma
Choosing Biosigma means relying on an Italian manufacturer that combines **experience**, **innovation** and **quality**.
All production processes, both in-house and of selected partners, are subject to strict controls according to the highest quality standards, ensuring the absence of contamination and full product conformity.

CSQ ISO 13485 · SYSTEM CERTIFICATION ISO 14001 SGS · SYSTEM CERTIFICATION ISO 45001 SGS · SYSTEM CERTIFICATION ISO/IEC 27001 SGS

ACT. The Environmental Impact Factor Label

ISCC International Sustainability & Carbon Certification

FDA U.S. FOOD & DRUG ADMINISTRATION

isber INTERNATIONAL SOCIETY FOR BIOLOGICAL AND ENVIRONMENTAL REPOSITORIES

ESBB European, Middle Eastern & African Society for Biopreservation and Biobanking

CONFINDUSTRIA VENEZIA AREA METROPOLITANA DI VENEZIA E ROVIGO

Printed on **natural paper**, produced with cellulose from the processing of invasive **algae** from the **Venice lagoon**

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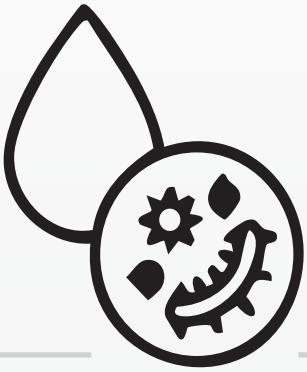
Enumeration of cultivable microorganisms:

Colony count by inoculation on nutrient agar culture medium

INTRODUCTION TO THE STANDARD

ISO 6222:1999 describes a method for the enumeration of cultivable microorganisms in water by counting the colonies grown on nutrient agar after aerobic incubation at two different temperatures: 36 °C for mesophilic microorganisms and 22 °C for psychrophilic microorganisms.



NORMATIVE REFERENCES

The ISO Standard is indicated as a reference method by **Legislative Decree n. 18 of 23 February 2023,** implementing **Directive (UE) 2020/2184 of the European Parliament and of the Council, of 16 December 2020**, on the quality of water intended for human consumption (however, the decree explicitly prescribes enumeration at 22 °C only).

DESTINATION OF USE

The method is intended to evaluate the performance of the treatment processes applied by public drinking water suppliers, as well as for general use across all types of water. It is particularly suitable for water intended for human consumption, including water supplied in sealed containers and natural mineral waters.

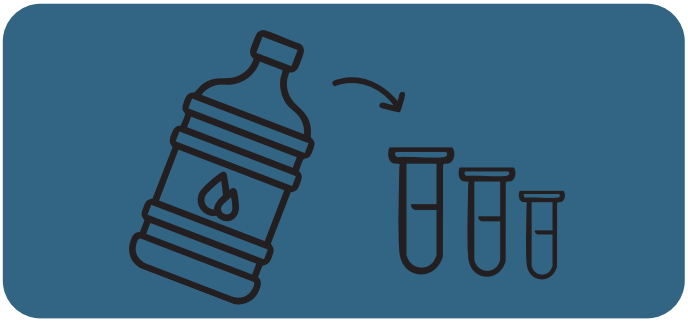
ISO 6222:1999 - Water quality

Enumeration of cultivable microorganisms:

Colony count by inoculation on nutrient agar culture medium

Analysis procedure:

Sampling, handling and storage shall follow the general regulations given in ISO EN 25667-2 and ISO 5667-3.



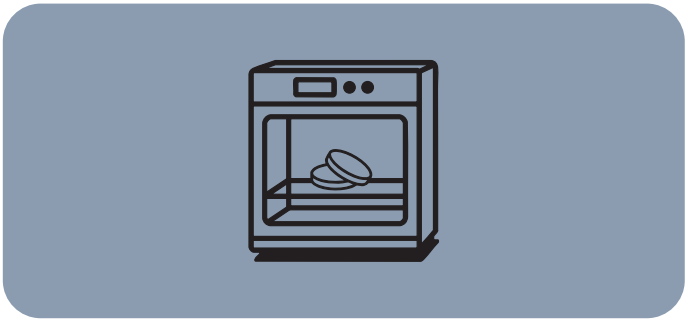
Sampling

1. Per waters supplied in closed containers, including mineral waters, the sample must be kept at 5 ± 3°C and analyzed within 12 hours of bottling.

if necessary, serial dilutions can be prepared in Maximum Recovery Diluent

Plating

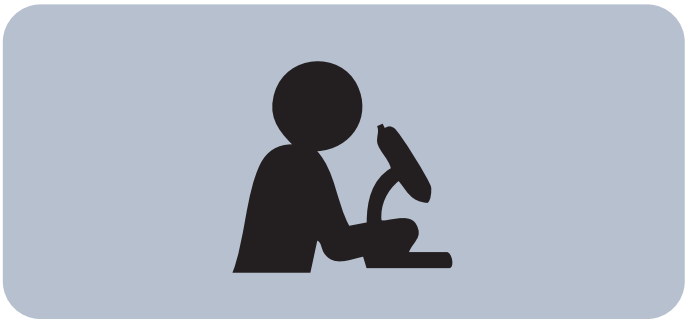
2. Max 2mL of sample is poured into a Petri Dish, followed by 15 to 20mL of Yeast Extract Agar prepared in solution.
3. The contents are mixed by gently rotating the dish by hand.



Incubation

4. Incubation:
   - At least one plate containing the sample (or a dilution of it) at 22 ± 2°C for 68 ± 4h
   - One plate at 36 ± 2°C for 44 ± 4h*.

* The Legislative Decree n.18 of 23 February 2023 explicitly refers to enumeration at 22°C only



Esamimation

5. Immediately after the incubatiopn period, the plates are exsaminated and results are expressed as CFU/mL.

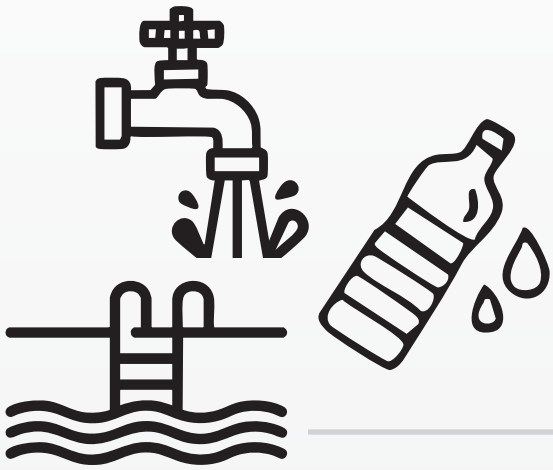
If immediate examination is not possible, plates shall be stored at 5 ± 3 °C and analysed within 48h.

ISO 9308-1:2017 - Water quality

Enumeration of Escherichia coli and Coliform Bacteria:
Membrane filtration method for waters with low background microbial flora

INTRODUCTION TO THE STANDARD

ISO 9308-1:2017 specifies a method for the enumeration of bacteria by membrane filtration and culture on chromogenic medium.
It is suitable for waters with low background microbial flora (ex. drinking water or disinfected swimming pool water)



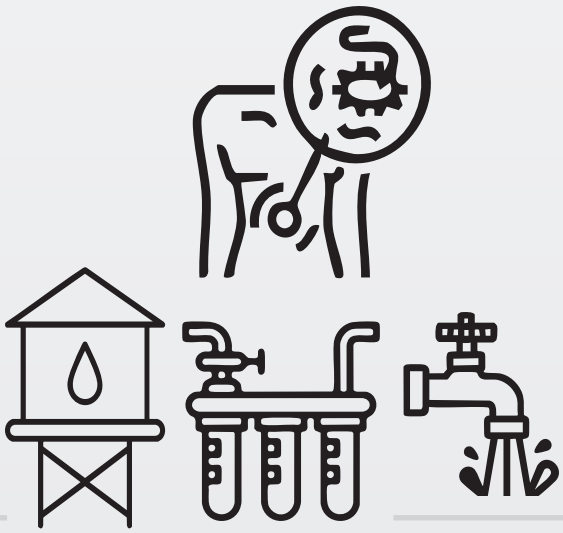
NORMATIVE REFERENCES

The standard is indicated as a method by **Legislative Decree n.18 of 23 February 2023,** implementing **Directive (UE) 2020/2184 of the European Parliament and of the Council, of 16 December 2020**, on the quality of water intended for human consumption.

DESTINATION OF USE

This method is intended to monitor:

- *Escherichia coli* as an indicator of faecal contamination.
- Coliform bacteria as indicators of failure in the treatment, storage, or distribution of the analysed water.

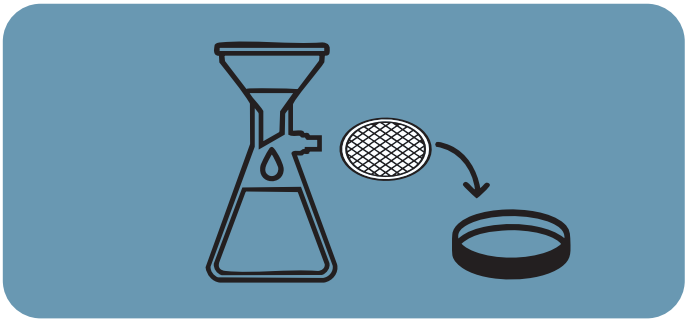


ISO 9308-1:2017 - Water quality

Enumeration of Escherichia coli and Coliform Bacteria:

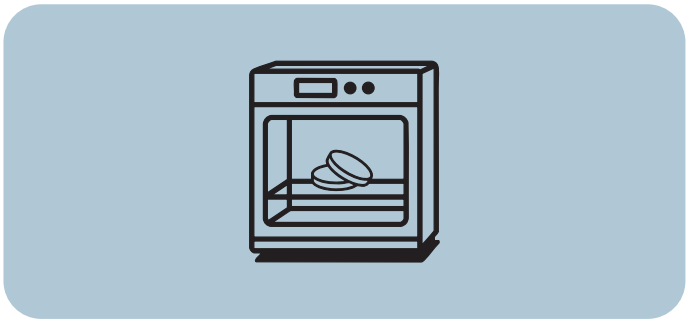
Membrane filtration method for waters with low background microbial flora

Analysis procedure:



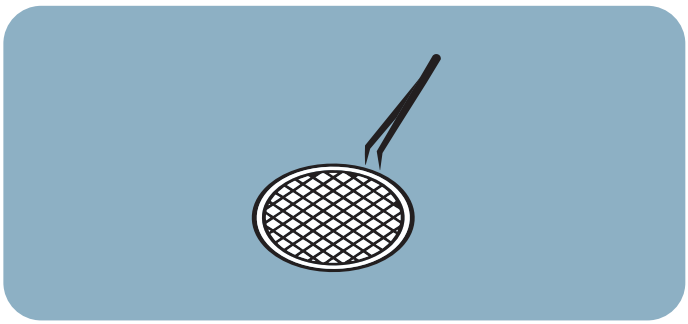
Filtration

1. 100mL of the sample (or other volumes, as long as not less than 10mL) are filtered through an MCE membrane (or another suitable material) with a pore size of 0.45µm and a diameter of 47-50mm.



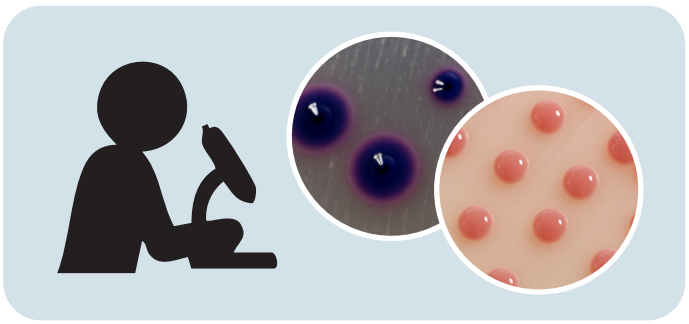
Incubation

3. The plate is incubated upside down at 36 ± 2°C for 21-24h.



Membrane collection

2. The membrane is removed and placed onto a plate containing CCA medium, a chromogenic agar that allows the terreno cromogenico that allows the simultaneous identification of *E. coli* and coliform bacteria.



Esamination

4. Esamination of the plate:
   - All blue to violet colonies are *E. coli*;
   - All pink to red colonies are presumptive coliforms other than *E. coli*.

CONFIRMATION

E. coli does not require confirmation.
All pink to red colonies (or at least 10 of them) shall be subjected to an oxidase test (if colonies are not well isolated, they shall be subcultured on a non-selective agar before the test and incubated at 36 ±2°C per 21 ± 3h).
A blue to violet colour within 30 seconds is to be considered positive.
Colonies that test negative shall be considered coliform bacteria.

Results shall be expressed in CFU per 100 mL (or per the volume filtered).

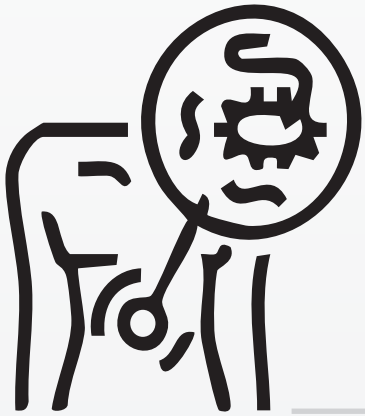
All blue to violet colonies shall be counted as*E. coli*.
All blue to violet colonies, together with all pink to red colonies that tested oxidase-negative, shall be counted as coliform bacteria.

ISO 7899-2:2000 - Water quality

Detection and Enumeration of Intestinal Enterococci: Membrane filtration method

INTRODUCTION TO THE STANDARD

This part of **ISO 7899** describes a method for the isolation of intestinal enterococci, which are considered indicators of faecal contamination. The method allows the detection and enumeration of *Enterococcus faecalis*, *E. faecium*, *E. durans* e *E. hirae*.
Other species belonging to the genus Enterococcus, as well as some species of the genus Streptococcus (*S. bovis* and *S. equinus*) may occasionally be detected.



NORMATIVE REFERENCES

The standard is indicated as a method by **Legislative Decree n.18 of 23 February 2023,** implementing **Directive (UE) 2020/2184 of the European Parliament and of the Council, of 16 December 2020**, on the quality of water intended for human consumption.

DESTINATION OF USE

This part of **ISO 7899** is particularly suitable for the examination of drinking water, swimming pool water, and other clean or disinfected waters. However, the method can be applied to all types of water, except those with a high content of suspended matter or significant levels of interfering microorganisms

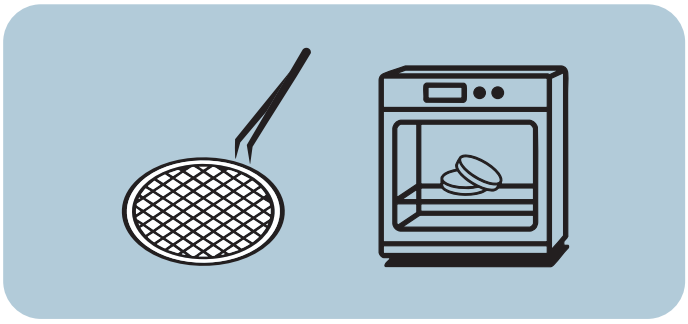
ISO 7899-2:2000 - Water quality

Detection and Enumeration of Intestinal Enterococci:
Membrane filtration method

Analysis procedure:

Sampling

1. The examination of the sample should preferably begin immediately after collection.
2. If the sample is kept at ambient temperature, it shall be processed within 6 hours of collection; in exceptional cases, the sample may be refrigerated at 5 ± 3 °C and filtered within 24 hours.

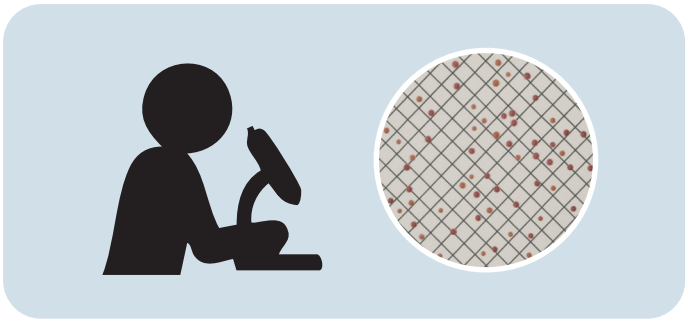


Incubation

4. After filtration, the membrane is removed and placed onto Slanetz–Bartley agar.
5. Incubate at 36 ± 2˚C for 44 ± 4h.

Filtration

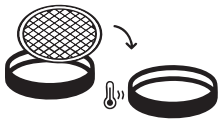
3. The sample is filtered through a membrane with pore size of 0.45µm.



Esamination

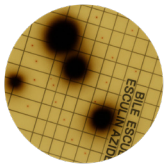
6. Enterococcal colonies appear convex, with pink, red, or brown colouring - either centrally or throughout the entire colony.

CONFERMA



1. The entire membrane is transferred, without inverting it, onto preheated Bile Aesculine Azide Agar at 44˚C.

2. Incubation shall be carried out at 44 ± 0.5 °C for 2 hours, after which the plate shall be read without delay.



Enterococci hydrolyse esculin, forming a dark brown to black tannin-like compound that diffuses into the medium and rapidly degrades.

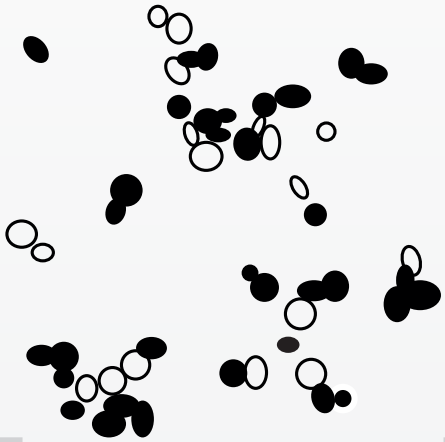
All colonies surrounded by a halo of the described colour shall be counted as enterococci.
It is important that colonies are well separated, so that the halo of positive colonies does not also surround negative ones.

ISO 14189:2013 - Water quality

Enumeration of *Clostridium perfringens*: Membrane filtration method

INTRODUCTION TO THE STANDARD

The standard specifies a method for the enumeration of vegetative cells and spores of *Clostridium perfringens* by membrane filtration.
The presence of this bacterium in the sample is an indication of faecal contamination.
Since spores survive in water longer than vegetative cells, *Clostridium perfringens* is considered a useful indicator of remote or intermittent faecal contamination.

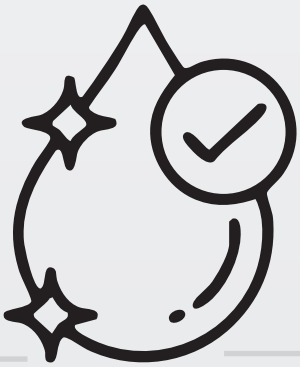


NORMATIVE REFERENCES

The method is referenced in **Legislative Decree n.18 of 23 February 2023 n.18** implementing **Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020**, on the quality of water intended for human consumption.
The Decree specifies that*Clostridium perfringens* shall be measured only when its monitoring is deemed appropriate based on risk assessment.

DESTINATION OF USE

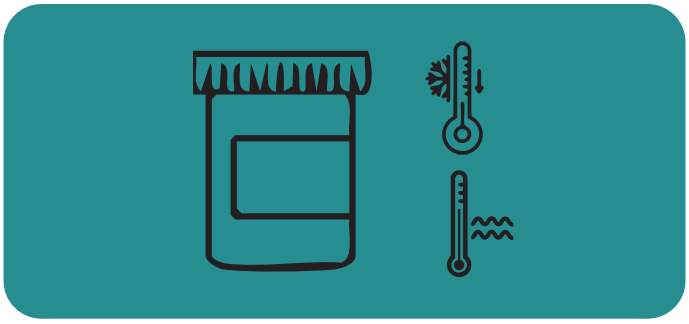
The method was developed for samples of water intended for human consumption, but it is also applicable to other types of water, provided they do not contain particulate matter or colloidal substances.



ISO 14189:2013 - Water quality

Enumeration of *Clostridium perfringens*: Membrane filtration method

Procedura d'analisi:

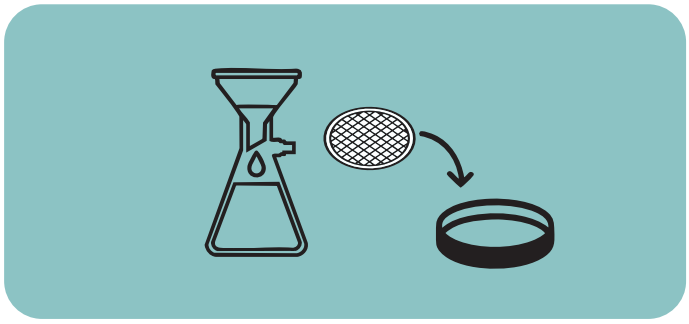


Sampling - conservation and pretreatment

1. The sample shall be refrigerated during transport at 5 ± 3°C and should be analysed on the same working day.

The recommended maximum storage time, including transport, is 12h (max 18h) for vegetative cells, and 24h (max 72h) for spores.

If only spores are to be enumerated, the sample shall undergo thermal pretreatment in a thermostatic water bath at 60 ± 2 °C for 15 ± 1 min. The volume subjected to heating should be greater than the volume actually used for analysis.



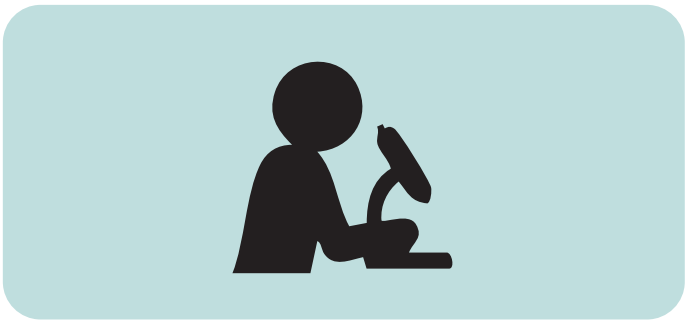
Filtration and inoculation

2. A sample volume (or of an appropriate dilution) shall be selected to obtain a count between 10 and 80 CFU per plate, then an adequate volume is filtered (100mL for water intended for human consumption) and the membrane is placed onto TSC agar.

Alternatively, a layer of TSC agar (previously equilibrated in a water bath at 45 ± 1 °C) may be poured over the membrane to create a cover layer.
This technique can enhance the colouring of target colonies but makes the recovery of pure cultures more difficult.

Incubation

3. After inoculation, the plates shall be incubated in the shortest possible time (within 1 hour). Incubation shall be performed upside down, under anaerobic conditions, at 44 ± 1°C for 21 ± 3h.



Esamination

4. Plates shall be read within 30min after the end of incubation, as the colony colouring fades rapidly.

All black, grey, or yellow-brown colonies, even if pale, shall qualify as presumptive *C. perfringens* and shall be subjected to a confirmation test.

CONFIRMATION

1. All presumptive colonies shall be subcultured in Blood Agar or another non-selective nutrient medium (all if less than 10 CFU, at least 10 if more than 10).

2. The plate shall be incubated at 36 ± 2°C for 21 ± 3h.

3. The colonies are taken and streaked onto a paper strip, adding 2/3 drops of acid phosphatase reagent.

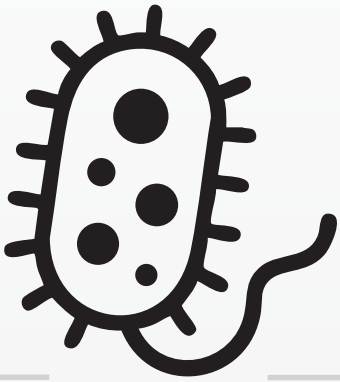
A violet colour after 3–4min indicates a positive reaction and confirms the colonies. Results are expressed as UFC/100mL (or other filtered volume).

ISO 16266:2006 - Water quality

Detection and Enumeration of *Pseudomonas aeruginosa*: Membrane filtration method

INTRODUCTION TO THE STANDARD

The standard describes a method for the detection and enumeration of *Pseudomonas aeruginosa*, an opportunistic bacterium capable of proliferating in water with extremely low nutrient levels.



NORMATIVE REFERENCES

The testing for *P. aeruginosa* in water intended for human consumption has been abolished, except for natural mineral waters, in accordance with **Directive (EU) 2009/54 EC of the European Parliament and of the Council**.

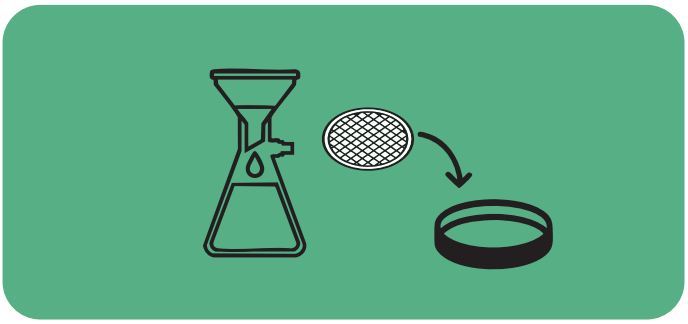
DESTINATION OF USE

The described method was developed for the isolation and enumeration of *P. aeruginosa* in bottled water samples, but it can also be applied to other types of water with low background microbial flora, such as swimming pool water and water intended to human consumption in general.

ISO 16266:2006 - Water quality

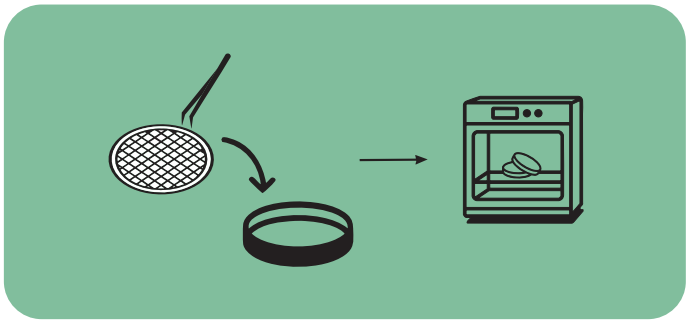
Detection and Enumeration of *Pseudomonas aeruginosa*: Membrane filtration method

Analysis procedure:



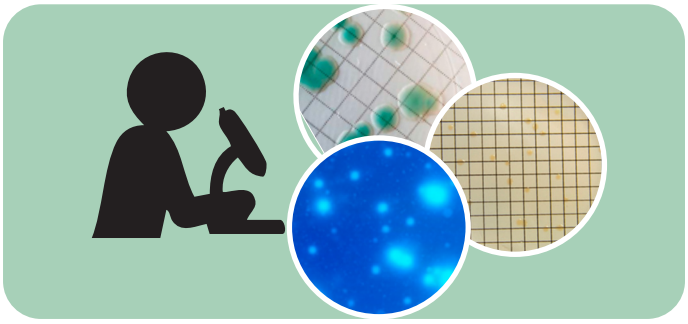
Filtration

1. The sample, or appropriate dilutions, is filtered (250mL for natural mineral waters, 100mL for other waters) through MCE membrane with a pore size of 0.45µm.



Filtration and incubation

2. After filtration, the membrane is taken and transferred onto a plate containing CN Agar.
3. Plates are incubated at 36 ± 2°C for 44 ± 4h in containers to prevent drying.



Esamination

4. Plates shall be esaminated at 22 ± 2h and at 44 ± 4h*.

* The 22-hour enumeration is used to prevent potential colony confluence at 44h.
For the final result, the higher count between the two enumerations shall be considered.

All colonies with a blue/green colour, indicating pyocyanin production, shall be counted as *P. aeruginosa*, with no need for confirmation.

The membrane is examined under UV light* (360 ± 20nm) and all fluorescent colonies that are not blue/green are counted as presumptive *P.aeruginosa*, to be confirmed by the acetamide broth test.

* Exposure to UV light shall not be prolonged, in order to avoid compromising the viability and growth of colonies on the confirmation medium.

Non-fluorescent red/brown colonies observed under UV light are counted as presumptive P.*aeruginosa*, to be confirmed by the oxidase test, the acetamide broth test, and subculturing on King's B medium.

ISO 16266:2006 - Water quality

Detection and Enumeration of *Pseudomonas aeruginosa*: Membrane filtration method

CONFIRMATION

1. All presumptive colonies shall be subcultured on Nutrient Agar (or other non-selective medium without fermentable carbohydrates) and incubated at 36 ± 2°C for 22 ± 2h.

2. Red/brown colonies are subjected to the oxidase test.

3. Oxidase-positive colonies shall be subcultured on King's B medium and incubated at 36 ± 2 °C for 24h up to 5 days, with daily examination under UV light to detect fluorescence.

4. In parallel, oxidase-positive colonies are inoculated into Acetamide Medium and incubated at 36 ± 2°C for 22 ± 2h. One to two drops of Nessler's reagent are then added to detect ammonia:

in case of a positive result, a yellow to reddish coloration appears. For colonies that are fluorescent on CN Agar, this test alone is sufficient for confirmation.

Colony appearance on CN Agar	Ammonia production from acetamide	Positivity to oxidase test	Fluorescence under UV on King's B Agar	Confirmed as *P. aeruginosa*
Blue or green	not tested	not tested	not tested	YES
UV fluorescent (non-blue or green colony)	+	not tested	not tested	YES
Red-brown	+	+	+	YES
Other appearance	not tested	not tested	not tested	NO

All confirmed colonies are counted.

Results shall be expressed as **CFU per 250mL** for natural mineral waters, and typically as **CFU per 100mL** for other waters.

CONSUMABLES

DILUENTS FOR MICROBIOLOGY:

Item	Description	Type	Format	Sales unit
BLK10041	Buffered Peptone Water (BPW)	Dehydrated	500g	1
BLK23448	Buffered Peptone Water (BPW)	Ready-to-use bottles	225mL	12
BLK64130	Buffered Peptone Water (BPW)	Ready-to-use bottles	90mL	6
BLK5027/20P	Buffered Peptone Water (BPW)	Ready-to-use bottles	9mL	20
BLK10279	Maximum Recovery Diluent	Dehydrated	500g	1
BLK63139	Maximum Recovery Diluent	Ready-to-use bottles	90mL	6
BLK5168/100P	Maximum Recovery Diluent	Ready-to-use bottles	9mL	100
BLK5168/20P	Maximum Recovery Diluent	Ready-to-use bottles	9mL	20

IDENTIFICATION TEST:

Item	Description	Format	Sales unit
BLK67312	Acid Phosphatase test (50 test)	1x5mL	1
BLK7464230	Nessler Reagent*	100mL	1
BLKMST-D57	Oxidase Discs	100	1

* to be used together with Acetamide Broth

TORBIDITY STANDARD:

Item	Description	Standard	Sales unit
BLK8450	MC Farland Turbidity	0,5 – 1,0 – 2,0 – 3.0 – 4,0	5

STERILITY CYCLE VALIDATION:

Item	Description	Format	Sales unit
BLK91050	Steril Control GST E6 Ampoukles	50x4mL	1

MICROBIOLOGY CULTURE MEDIA:

Item	Description	Reference ISO	Type	Format	Packaging	Sales unit
BLK10272	Yeast Extract Agar	ISO 6222	Dehydrated	1x500g	1	1
BLK63553	Yeast Extract Agar	ISO 6222	Ready-to-use bottles	12x200mL	12	1
BLK5288/20	Yeast Extract Agar	ISO 6222	Ready-to-use test tubes	20x10mL	20	1
BLK10504	CCA (Chromogenic Coliform Agar)	ISO 9308-1	Dehydrated	1x500g	1	1
BLK63638	CCA (Chromogenic Coliform Agar)	ISO 9308-1	Ready-to-use bottles	6x100mL	6	1
BLK3623010/20	CCA (Chromogenic Coliform Agar)	ISO 9308-1	Ready-to-use plates	20x60mm	20	1
BLK1110203/20C	CCA (Chromogenic Coliform Agar)	ISO 9308-1	Ready-to-use plates	20x90mm	20	1
BLK10167	Slanetz-Bartley	ISO 7899	Dehydrated	1x 500g	1	1
BLK16071	TTC solution 1%	ISO 7899	Supplement	5x10mL	5	1
BLK63525	Slanetz-Bartley	ISO 7899	Ready-to-use bottles	12x200mL	12	1
BLK1954747/20	Slanetz-Bartley	ISO 7899	Ready-to-use plates	20x60mm	20	1
BLK10024	Bile Aesculine Azide Agar	ISO 7899	Dehydrated	1x 500g	1	1
BLK63305	Bile Aesculine Azide Agar	ISO 7899	Ready-to-use bottles	6x100mL	6	1
BLK0341006/20	Bile Aesculine Azide Agar	ISO 7899	Ready-to-use plates	20x60mm	20	1
BLK10244	TSC Agar Base	ISO 14189	Dehydrated	1x 500g	1	1
BLK16070	TSC Supplement	ISO 14189	Supplement	10x500mL	10	1
BLK63708	TSC	ISO 14189	Ready-to-use bottles	12x200mL	12	1
BLK3861812/20	TSC	ISO 14189	Ready-to-use plates	20x60mm	20	1
BLK10050	Columbia Blood Agar Base	ISO 14189	Dehydrated	1x 500g	1	1
BLK5459	Sangue di montone defibrinato sterile	ISO 14189	Supplement	1x100mL	1	1
BLK0454792/20	Columbia Blood Agar + 5% sangue di montone	ISO 14189	Ready-to-use plates	20x90mm	20	1
BLK10204	Pseudomonas Agar Base	ISO 16266	Dehydrated	1x 500g	1	1
BLK16058	CN supplement	ISO 16266	Supplement	10x500mL	10	1
BLK16038	Glycerol	ISO 16266	Supplement	1x 200mL	1	1
BLK2521105/20	Pseudomonas CN Agar	ISO 16266	Ready-to-use plates	20x60mm	20	1
BLK10115	Nutrient Agar	ISO 16266	Dehydrated	1x500g	1	1
BLK63513	Nutrient Agar	ISO 16266	Ready-to-use bottles	12x200mL	12	1
BLK0024005/20	Nutrient Agar	ISO 16266	Ready-to-use plates	20x90mm	20	1
BLK10298	King's B medium	ISO 16266	Dehydrated	1x 500g	1	1
BLK16038	Glycerol	ISO 16266	Supplement	1x 200mL	1	1
BLK4058038/20	King's B Medium	ISO 16266	Ready-to-use plates	20x90mm	20	1
BLK3801011/20	King's B Medium	ISO 16266	Ready-to-use plates	20x60mm	20	1
BLK5156/20	King's B Medium	ISO 16266	Ready-to-use tubes	20x5mL	20	1
BLK10300	Acetamide Broth*	ISO 16266	Dehydrated	1x 500g	1	1
BLK5002/20P	Acetamide Broth*	ISO 16266	Ready-to-use tubes	20x5mL	20	1

* to be used together with Reagent Nessler

QUALITY CONTROL STRAINS FOR CULTURE MEDIA (ISO 17034-accredited supplier):

CRYO-BACTERIA
Non titolated - RM

Frozen

DISC-BACTERIA
Non titolated - RM

Plate

LYO-BACTERIA
Non titolated / Titolated- RM

Lyophilized

Each tube **contains approximately 20-25** porous ceramic **beads**, each carrying an aliquot of the bacterial colony, preserved and transported at -20/-40°C.

DISC culture plates are MR ready to use, refrigerated at 2/8°C and sealed with parafilm. Each plate **contains at least 5 colonies** of the target microorganism.

LYO lyophilized products are **10g of loose powder** containing the target strain.

Item	WDCM	Description	Type	Title	Sales unit
BAC-C-BSS01	00003	Bacillus subtilis ssp. spizizenii	Frozen	-	1
BAC-D-BSS01	00003	Bacillus subtilis ssp. spizizenii	Non titolato	-	1
BAC-L-BSS01	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	-	5
BAC-LT-BSS01B1	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^1	5
BAC-LT-BSS01M2	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^2	5
BAC-LT-BSS01M3	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^3	5
BAC-LT-BSS01M4	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^4	5
BAC-LT-BSS01A5	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^5	5
BAC-LT-BSS01A6	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^6	5
BAC-LT-BSS01A7	00003	Bacillus subtilis ssp. spizizenii	Lyophilized	10^7	5
BAC-C-CP01	00007	Clostridium perfringens	Frozen	-	1
BAC-D-CP01	00007	Clostridium perfringens	Plate	-	1
BAC-L-CP01	00007	Clostridium perfringens	Lyophilized	-	5
BAC-LT-CP01B1	00007	Clostridium perfringens	Lyophilized	10^1	5
BAC-LT-CP01M2	00007	Clostridium perfringens	Lyophilized	10^2	5
BAC-LT-CP01M3	00007	Clostridium perfringens	Lyophilized	10^3	5
BAC-LT-CP01M4	00007	Clostridium perfringens	Lyophilized	10^4	5
BAC-LT-CP01A5	00007	Clostridium perfringens	Lyophilized	10^5	5
BAC-LT-CP01A6	00007	Clostridium perfringens	Lyophilized	10^6	5
BAC-LT-CP01A7	00007	Clostridium perfringens	Lyophilized	10^7	5
BAC-C-EF02	00009	Enterococcus faecalis	Frozen	-	1
BAC-D-EF02	00009	Enterococcus faecalis	Plate	-	1
BAC-L-EF02	00009	Enterococcus faecalis	Lyophilized	-	5
BAC-LT-EF02B1	00009	Enterococcus faecalis	Lyophilized	10^1	5
BAC-LT-EF02M2	00009	Enterococcus faecalis	Lyophilized	10^2	5
BAC-LT-EF02M3	00009	Enterococcus faecalis	Lyophilized	10^3	5
BAC-LT-EF02M4	00009	Enterococcus faecalis	Lyophilized	10^4	5
BAC-LT-EF02A5	00009	Enterococcus faecalis	Lyophilized	10^5	5

Item	WDCM	Description	Type	Title	Sales unit
BAC-LT-EF02A6	00009	Enterococcus faecalis	Lyophilized	10^6	5
BAC-LT-EF02A7	00009	Enterococcus faecalis	Lyophilized	10^7	5
BAC-C-EF01	00087	Enterococcus faecalis	Frozen	-	1
BAC-D-EF01	00087	Enterococcus faecalis	Plate	-	1
BAC-L-EF01	00087	Enterococcus faecalis	Lyophilized	-	5
BAC-LT-EF01B1	00087	Enterococcus faecalis	Lyophilized	10^1	5
BAC-LT-EF01M2	00087	Enterococcus faecalis	Lyophilized	10^2	5
BAC-LT-EF01M3	00087	Enterococcus faecalis	Lyophilized	10^3	5
BAC-LT-EF01M4	00087	Enterococcus faecalis	Lyophilized	10^4	5
BAC-LT-EF01A5	00087	Enterococcus faecalis	Lyophilized	10^5	5
BAC-LT-EF01A6	00087	Enterococcus faecalis	Lyophilized	10^6	5
BAC-LT-EF01A7	00087	Enterococcus faecalis	Lyophilized	10^7	5
BAC-C-EC01	00012	Escherichia coli	Frozen	-	1
BAC-D-EC01	00012	Escherichia coli	Plate	-	1
BAC-L-EC01	00012	Escherichia coli	Lyophilized	-	5
BAC-LT-EC01B1	00012	Escherichia coli	Lyophilized	10^1	5
BAC-LT-EC01M2	00012	Escherichia coli	Lyophilized	10^2	5
BAC-LT-EC01M3	00012	Escherichia coli	Lyophilized	10^3	5
BAC-LT-EC01M4	00012	Escherichia coli	Lyophilized	10^4	5
BAC-LT-EC01A5	00012	Escherichia coli	Lyophilized	10^5	5
BAC-LT-EC01A6	00012	Escherichia coli	Lyophilized	10^6	5
BAC-LT-EC01A7	00012	Escherichia coli	Lyophilized	10^7	5
BAC-C-EC02	00013	Escherichia coli	Frozen	-	1
BAC-D-EC02	00013	Escherichia coli	Plate	-	1
BAC-L-EC02	00013	Escherichia coli	Lyophilized	-	5
BAC-LT-EC02B1	00013	Escherichia coli	Lyophilized	10^1	5
BAC-LT-EC02M2	00013	Escherichia coli	Lyophilized	10^2	5
BAC-LT-EC02M3	00013	Escherichia coli	Lyophilized	10^3	5
BAC-LT-EC02M4	00013	Escherichia coli	Lyophilized	10^4	5
BAC-LT-EC02A5	00013	Escherichia coli	Lyophilized	10^5	5

QUALITY CONTROL STRAINS FOR CULTURE MEDIA (ISO 17034-accredited supplier):

Item	WDCM	Description	Type	Title	Sales unit
BAC-LT-EC02A6	00013	Escherichia coli	Lyophilized	10^6	5
BAC-LT-EC02A7	00013	Escherichia coli	Lyophilized	10^7	5
BAC-C-EC03	00179	Escherichia coli	Frozen	-	1
BAC-D-EC03	00179	Escherichia coli	Plate	-	1
BAC-L-EC03	00179	Escherichia coli	Lyophilized	-	5
BAC-LT-EC03B1	00179	Escherichia coli	Lyophilized	10^1	5
BAC-LT-EC03M3	00179	Escherichia coli	Lyophilized	10^3	5
BAC-LT-EC03M2	00179	Escherichia coli	Lyophilized	10^2	5
BAC-LT-EC03M4	00179	Escherichia coli	Lyophilized	10^4	5
BAC-LT-EC03A5	00179	Escherichia coli	Lyophilized	10^5	5
BAC-LT-EC03A6	00179	Escherichia coli	Lyophilized	10^6	5
BAC-LT-EC03A7	00179	Escherichia coli	Lyophilized	10^7	5
BAC-C-KA01	00175	Klebsiella aerogenes	Frozen	-	1
BAC-D-KA01	00175	Klebsiella aerogenes	Plate	-	1
BAC-L-KA01	00175	Klebsiella aerogenes	Lyophilized	-	5
BAC-LT-KA01B1	00175	Klebsiella aerogenes	Lyophilized	10^1	5
BAC-LT-KA01M2	00175	Klebsiella aerogenes	Lyophilized	10^3	5
BAC-LT-KA01M3	00175	Klebsiella aerogenes	Lyophilized	10^2	5
BAC-LT-KA01M4	00175	Klebsiella aerogenes	Lyophilized	10^4	5
BAC-LT-KA01A5	00175	Klebsiella aerogenes	Lyophilized	10^5	5
BAC-LT-KA01A6	00175	Klebsiella aerogenes	Lyophilized	10^6	5
BAC-LT-KA01A7	00175	Klebsiella aerogenes	Lyophilized	10^7	5
BAC-C-PA03	00024	Pseudomonas aeruginosa	Frozen	-	1
BAC-D-PA03	00024	Pseudomonas aeruginosa	Plate	-	1
BAC-L-PA03	00024	Pseudomonas aeruginosa	Lyophilized	-	5
BAC-LT-PA03B1	00024	Pseudomonas aeruginosa	Lyophilized	10^1	5
BAC-LT-PA03M2	00024	Pseudomonas aeruginosa	Lyophilized	10^3	5
BAC-LT-PA03M3	00024	Pseudomonas aeruginosa	Lyophilized	10^2	5
BAC-LT-PA03M4	00024	Pseudomonas aeruginosa	Lyophilized	10^4	5
BAC-LT-PA03A5	00024	Pseudomonas aeruginosa	Lyophilized	10^5	5
BAC-LT-PA03A6	00024	Pseudomonas aeruginosa	Lyophilized	10^6	5
BAC-LT-PA03A7	00024	Pseudomonas aeruginosa	Lyophilized	10^7	5
BAC-C-PA01	00025	Pseudomonas aeruginosa	Frozen	-	1
BAC-D-PA01	00025	Pseudomonas aeruginosa	Plate	-	1
BAC-L-PA01	00025	Pseudomonas aeruginosa	Lyophilized	-	5
BAC-LT-PA01B1	00025	Pseudomonas aeruginosa	Lyophilized	10^1	5

Item	WDCM	Description	Type	Title	Sales unit
BAC-LT-PA01M2	00025	Pseudomonas aeruginosa	Lyophilized	10^3	5
BAC-LT-PA01M3	00025	Pseudomonas aeruginosa	Lyophilized	10^2	5
BAC-LT-PA01M4	00025	Pseudomonas aeruginosa	Lyophilized	10^4	5
BAC-LT-PA01A5	00025	Pseudomonas aeruginosa	Lyophilized	10^5	5
BAC-LT-PA01A6	00025	Pseudomonas aeruginosa	Lyophilized	10^6	5
BAC-LT-PA01A7	00025	Pseudomonas aeruginosa	Lyophilized	10^7	5
BAC-C-PA02	00026	Pseudomonas aeruginosa	Frozen	-	1
BAC-D-PA02	00026	Pseudomonas aeruginosa	Plate	-	1
BAC-L-PA02	00026	Pseudomonas aeruginosa	Lyophilized	-	5
BAC-LT-PA02B1	00026	Pseudomonas aeruginosa	Lyophilized	10^1	5
BAC-LT-PA02M2	00026	Pseudomonas aeruginosa	Lyophilized	10^3	5
BAC-LT-PA02M3	00026	Pseudomonas aeruginosa	Lyophilized	10^2	5
BAC-LT-PA02M4	00026	Pseudomonas aeruginosa	Lyophilized	10^4	5
BAC-LT-PA02A5	00026	Pseudomonas aeruginosa	Lyophilized	10^5	5
BAC-LT-PA02A6	00026	Pseudomonas aeruginosa	Lyophilized	10^6	5
BAC-LT-PA02A7	00026	Pseudomonas aeruginosa	Lyophilized	10^7	5
BAC-C-SA01	00032	Staphylococcus aureus	Frozen	-	1
BAC-D-SA01	00032	Staphylococcus aureus	Plate	-	1
BAC-L-SA01	00032	Staphylococcus aureus	Lyophilized	-	5
BAC-LT-SA01B1	00032	Staphylococcus aureus	Lyophilized	10^1	5
BAC-LT-SA01M2	00032	Staphylococcus aureus	Lyophilized	10^3	5
BAC-LT-SA012M3	00032	Staphylococcus aureus	Lyophilized	10^2	5
BAC-LT-SA01M4	00032	Staphylococcus aureus	Lyophilized	10^4	5
BAC-LT-SA01A5	00032	Staphylococcus aureus	Lyophilized	10^5	5
BAC-LT-SA01A6	00032	Staphylococcus aureus	Lyophilized	10^6	5
BAC-LT-SA01A7	00032	Staphylococcus aureus	Lyophilized	10^7	5
BAC-C-SA02	00034	Staphylococcus aureus	Frozen	-	1
BAC-D-SA02	00034	Staphylococcus aureus	Plate	-	1
BAC-L-SA02	00034	Staphylococcus aureus	Lyophilized	-	5
BAC-LT-SA02B1	00034	Staphylococcus aureus	Lyophilized	10^1	5
BAC-LT-SA02M2	00034	Staphylococcus aureus	Lyophilized	10^3	5
BAC-LT-SA02M3	00034	Staphylococcus aureus	Lyophilized	10^2	5
BAC-LT-SA02M4	00034	Staphylococcus aureus	Lyophilized	10^4	5
BAC-LT-SA02A5	00034	Staphylococcus aureus	Lyophilized	10^5	5
BAC-LT-SA02A6	00034	Staphylococcus aureus	Lyophilized	10^6	5
BAC-LT-SA02A7	00034	Staphylococcus aureus	Lyophilized	10^7	5

CONSUMABLES:

Selection of high quality laboratory products.
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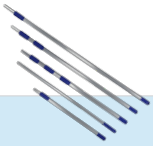
WATER SAMPLING:

BOTTLES:

Item	Description	Volume (mL)	Sales unit
BLP001	Graduated sterile water sampling bottle with thiosulphate	500	120
BLP003	Graduated sterile water sampling bottle with thiosulphate	1000	72

TELESCOPIC ROD:



Item	Description	Dimensions (m)	Sales unit
5065A-1001	Telescopic rod*	1m	1
5065A-1201	Telescopic rod*	0,75-1,2m	1
5065A-2501	Telescopic rod*	1,3-2,5m	1
5065A-2801	Telescopic rod*	1,0-2,8m	1
5065A-3001	Telescopic rod*	1,2-3m	1
5065A-4501	Telescopic rod*	1,7-4.5m	1
5065A-6001	Telescopic rod*	1,8-6m	1

* to be used with a compatible terminal accessory

GLOVES:

Item	Description	Size	Sales unit
BSI0801R	Nitrile gloves without powder	XS	100
BSI081R	Nitrile gloves without powder	S	200
BSI082R	Nitrile gloves without powder	M	200
BSI083R	Nitrile gloves without powder	L	200
BSI084R	Nitrile gloves without powder	XL	200

ANAEROBICITY:

Item	Description	Volume (L)	Sales unit
777943	Oxoid Aneorgen Gas	2,5L	10
777948	Oxoid Aneorgen Gas	3,5L	10
7777944	Anaerobic indicator x100	/	100

SAMPLING ACCESSORIES:

BEAKER:

Item	Description	Volume	Material	Sales unit
5065B-252	Angular beaker	250mL	Plastic	1
5065B-502	Angular beaker	500mL	Plastic	1
5065B-2002	Angular beaker	2L	Plastic	1
5065B-1002	Angular beaker	1L	Plastic	1
5065B-1001B	Angular beaker	1L	Steel	1
5065C-252	Pendular beaker	250mL	Plastic	1
5065C-502	Pendular beaker	500mL	Plastic	1
5065C-1002	Pendular beaker	1L	Plasti	1
5065C-2002	Pendular beaker	2L	Plastic	1
5065C-1001B	Pendular beaker	1L	Steel	1

BOTTLE HOLDER:

Item	Description	Volume	Material	Sales unit
5065D-502	Bottle holder with bottle	500mL	Polypropylene	1
5065D-1002	Bottle holder with bottle	1L	Plastic	1
5056D-503	Bottle holder with bottle	500mL	Steel	1

NETS:

Item	Description	Volume	Materials	Sales unit
5065M-310	Surface net	-	Nylon and plastic	1
5065N-190	Depth net	-	Nylon and plastic	1

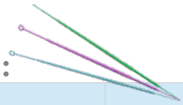
GLASS BOTTLES:

Item	Description	Volume (mL)	Sales unit
257065	Select borosilicate glass bottle 3.3	500	10
257066	Select borosilicate glass bottle 3.3	1000	10

CONSUMABLES:

For additional information visit our website. You can find updated certificates, descriptions, and technical sheets.

INOCULATION LOOPS:



Item	Description	Packaging	Sales unit
BSV120	Microloops - 10µL	peel pack 20pcs	10.000
BSV1200	Microloops - 10µL	peel pack 10pcs	12.000
BSV1201	Microloops - 10µL	peel pack 1pc	2.100
BSV1205	Microloops - 10µL	peel pack 5pcs	4.000
BSV121	Microloops - 1µL	peel pack 20pcs	10.000
BSV1210	Microloops - 1µL	peel pack 10pcs	12.000
BSV1211	Microloops - 1µL	peel pack 1pc	2.100
BSV1215	Microloops - 1µL	peel pack 5pcs	4.000

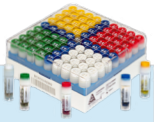
BACCHETTE:

Codice	Descrizione	Confezione	Unità di vendita
BSM0230	Bacchetta ad L	10pz	500
BSM0231	Bacchetta ad L	singola	200
BSM0235	Bacchetta ad L	5pz	500
BSM0240	Bacchetta a T	10pz	500
BSM0241	Bacchetta a T	singola	200
BSM0245	Bacchetta a T	5pz	500

MICROPIPETTE:

Item	Description	Volume (µL)	Sales unit
ABS128HPA	Fully autoclavable micropipette - variable volume	2-20	1
ABS1290HPA	Fully autoclavable micropipette - variable volume	10-100	1
ABS131HPA	Fully autoclavable micropipette - variable volume	20-200	1
ABS1311HPA	Fully autoclavable micropipette - variable volume	100-1.000	1
ABS127HPA	Fully autoclavable micropipette - variable volume	1.000-5.000	1

CLEARSTABLE:



Codice	Descrizione	Crioprotettore	Unità di vendita
CL1D25/MIX	Provette 1D da 2mL con biglie assortite, sterile (rack)	Si	25
CLDR1D25/MIX	Provette 1D da 2mL con biglie assortite, sterile (rack)	No	25
CL1D80/MIX	Provette 1D da 2mL con biglie assortite, sterile (rack)	Si	80
CLDR1D80/MIX	Provette 1D da 2mL con biglie assortite, sterile (rack)	No	80

TIPS:

Item	Description	Volume (µL)	Sales unit
BSR0412	Yellow tip for micropipette - rack	0-200	960
BSR0422	Yellow tip for micropipette - rack	200-1000	960
BSR083	Neutral tip for micropipette - rack	1000-5000	200

CRYOGEN® TUBES:

Item	Description	Volume	Height	Sales unit
CL2ARBEPSTS	CryoGen® test tubes with external cap	2mL	4,56cm	500
CL2ARBIPSTS	CryoGen® test tubes with external cap	2mL	4,82cm	500

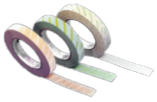
PLATES:

Item	Description	Diameter (mm)	Sales unit
BSM2120	Petri dishes with vents	90	480
BSM200	Petri dishes without vents	60	1.080
BSM201	Petri dishes with vents	55	1.200

CENTRIFUGE TUBES:

Item	Description	Packaging	Sales unit
CL474	Centrifuge conical tube - 50mL sterile	bag	500
CL475	Centrifuge conical tube - 50mL sterile	rack	500
CL477	Centrifuge self-standing tube - 50mL sterile	bag	500
CL482	Centrifuge conical tube - 15mL sterile	bag	500
CL490	Centrifuge conical tube - 15mL sterile	rack	500

INDICATORS:



Item	Description	Format	Sales unit
150260	Autoclave sterilisation indicator	tape 50x19	1
442400	pH indicator, 0-14	strip	100
442401	pH indicator, 1-14	tape 5m	1

CONSUMABLES:

Selection of high quality laboratory products.
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PIPETTOR:

Item	Description	Sales unit
BS400200	Electronic pipettor BiPette	1
861001	Red manual pipettor	1
861003	Yellow manual pipettor	1

PUMP:

Item	Description	Sales unit
886127	Pump for Alligator 200 Filtration System	1

FILTRATION RAMPS:

Item	Description	Material	N. of Channels	Sales unit
886196	Filtration MB ramp with 100mL funnel	Stainless steel	3	1
886197	Filtration MB ramp with 100mL funnel	Stainless steel	6	1
886039	Filtration MB ramp (without funnel)	Stainless steel	3	1
886040	Filtration MB ramp (without funnel)	Stainless steel	6	1
886037	Filtration MB ramp (head with silicone stopper no. 8)	Stainless steel	3	1
886036	Filtration MB ramp (head with silicone stopper no. 8)	Stainless steel	6	1
886038	Filtration MB ramp (head with silicone stopper no. 8)	Aluminium	3	1

FUNNELS:

Item	Description	Material	Filter (mm)	Sales unit
886169	Filtration funnel 100mL	Stainless steel	47	1
886170	Filtration funnel 300mL	Stainless steel	47	1
886171	Filtration funnel 500mL	Stainless steel	47	1

SEROLOGICAL PIPETTES:

Item	Description	Volume (mL)	Sales unit
CL100	Serological pipette, sterile	1	1000
CL101	Serological pipette, sterile	2	800
CL102	Serological pipette, sterile	5	300
CL103	Serological pipette, sterile	10	200
CL111	Serological pipette, sterile	25	200
CL112	Serological pipette, sterile	50	100
CL113	Serological pipette, sterile	10	50

LID FOR FUNNEL:

Item	Description	Material	Sales unit
886172	Lid for filtration funnel 100mL	Stainless steel	1
886173	Lid for filtration funnel 300mL e 500mL	Stainless steel	1

MEMBRANES:

Item	Description	Packaging	Sales unit
CL041	CN membrane filter, white with black grid, sterile, pore size 0.45 µm, ø 47mm	individually wrapped	100
CL043	CN membrane filter, white with black grid, sterile, pore size 0.45 µm, ø 47mm	Individually wrapped on tape	150
CL045	MCE membrane filter, white with black grid, sterile, pore size 0.45 µm, ø 47mm	individually wrapped	100
CL048	MCE membrane filter, white with black grid, sterile, pore size 0.45 µm, ø 47mm	Individually wrapped on tape	150

NOTES

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