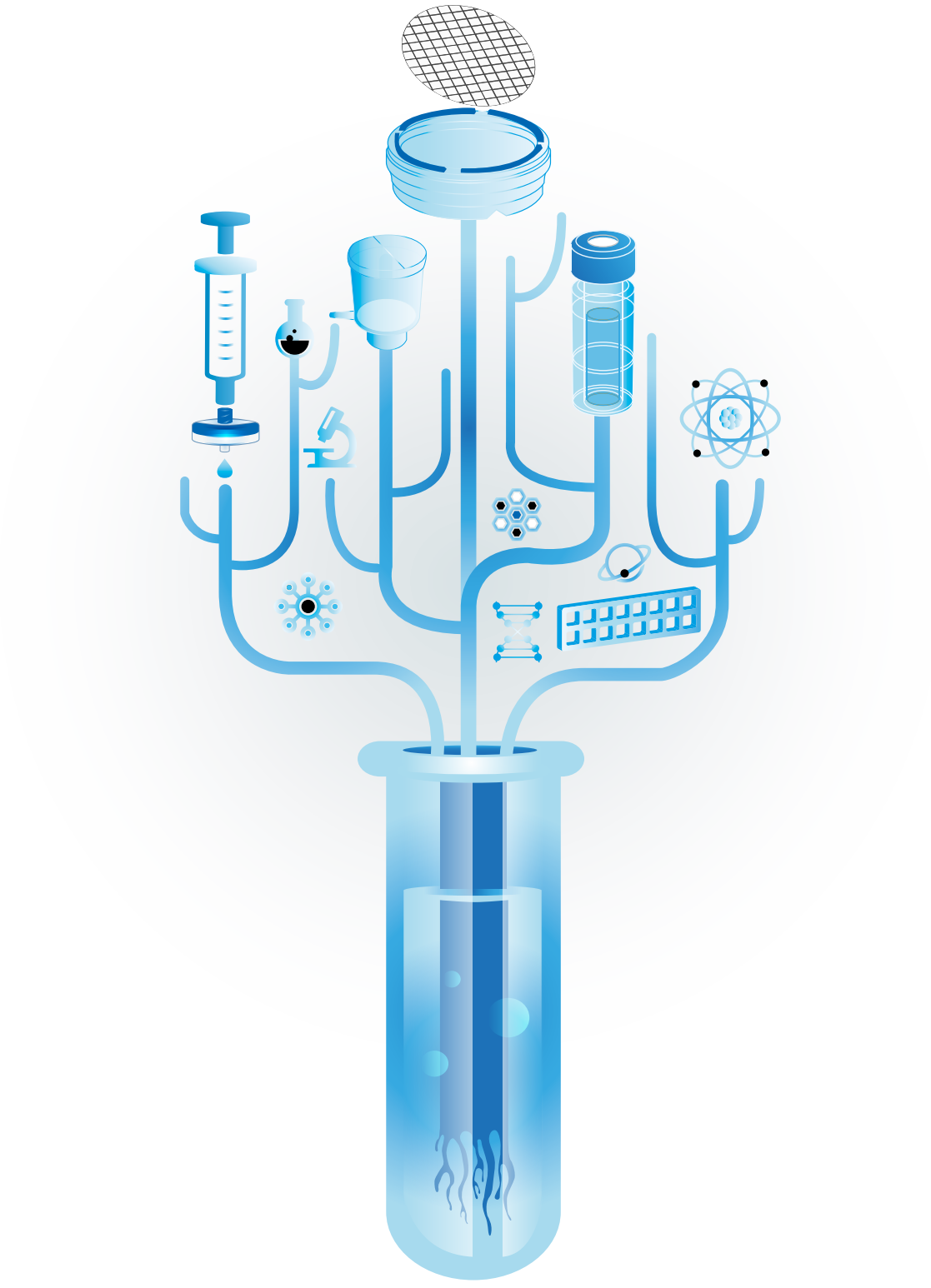
FILTER TECHNOLOGY

MICROBIOLOGY PRODUCT COLLECTION

GVS

FILTER TECHNOLOGY



www.gvs.com/microbiology

Microbiology

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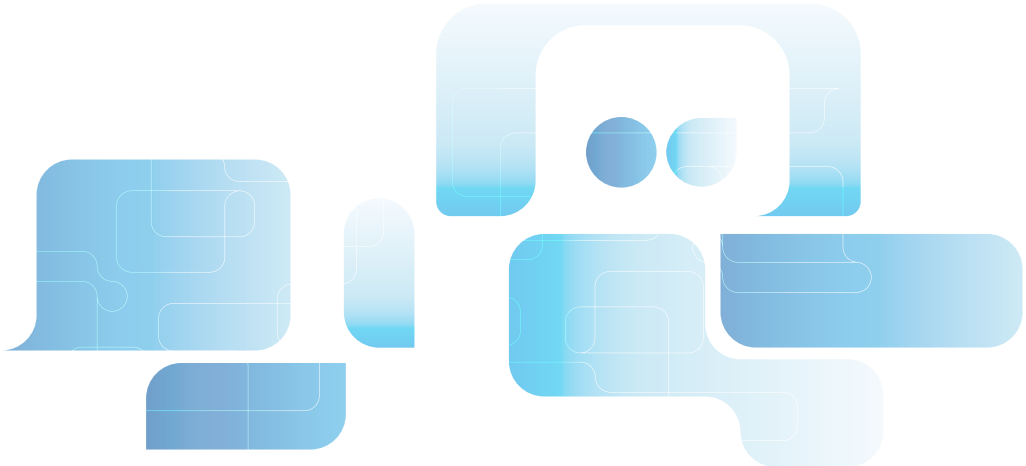


GVS Filter Technology is a fully integrated producer and supplier of microbiological solutions for the laboratory and testing community.

Microbiological testing includes the controlled analysis of water, beverage, food, pharmaceuticals and other consumer products and their processing equipment to evaluate for the presence of micro-organisms that may cause harm to the user or reduce the product quality or performance.

Microbiological testing is a crucial requirement across many industries worldwide where product, process and human health are influenced by the presence of micro-organisms: living bacteria, viruses, yeasts and molds that are too small to be visible to the naked eye.

International test procedures and standard lab practices have been established to provide strict methods for micro-organism analysis and identification.

Micro-organisms can be harmful or beneficial to the product or process under analysis.
Some diseases of human, animals and plants are caused by unwanted bacteria, yeasts and mold. Other beneficial yeasts and molds are responsible for numerous desirable processes in beer, wine, and food production and biotechnology.

GVS products for microbiological testing include applications and testing for:

- **Contamination of work surfaces and equipment**

- **Microbiological analysis of:**
  - Potable water
  - Beer and wine
  - Waste water
  - Dairy products
  - Soft drink and concentrates
  - Fruit juices
  - Fermented products

- **Detection of:**
  - Bacteria, fungi, molds
  - Escherichia coli (E.Coli)
  - Fecal streptococci and fecal coliforms
  - Staphylococci
  - Listeria
  - Enterococci
  - Pseudomonas aeruginosa
  - Legionellae

Microbiology Introduction

GVS supplies a comprehensive suite of filtration and culturing products used for filtration, isolation and culturing of samples for analysis of micro-organism presence. GVS products meet strict quality and sterility requirements and are designed to quickly and accurately test for the presence of airborne, surface, and liquid micro-organisms.

Sterility:
For Microbiological analysis the sterility of the analysis equipment, including the membranes and culturing media, is important to maintain a clean contaminant free zone. GVS ensures the sterility of its microbiological products through gamma radiation and steam sterilization. All products are labeled with lot number and expiration for additional control and assurity.

Product Quality Control:
Microbiological Analysis for good and bad micro-organisms present in processing, production and finished products

Contaminants and organisms are quantified and qualified at selected control points throughout the production steps and in the finished product. The main parameter of concern depends on the industry and the finished product under review. Leading parameters are yeast and mold, total bacteria count and E. coli as well as coliforms, fecal streptococci and pseudomonas aeruginosa.

The Workflow for Microbiological Analysis breaks down into 5 simple steps:
1) Obtain sample for analysis
2) Filter the sample
3) Add Nutrient media
4) Incubate and culture
5) Analyze and enumerate the results

Preparation for Microbiological Analysis includes selection of:
1) membrane type and pore size
2) Nutrient media
3)Filtering Equipment

This GVS Catalog provides guidance on the selection of membranes, nutrient media and equipment and details the microbiological products available from GVS.

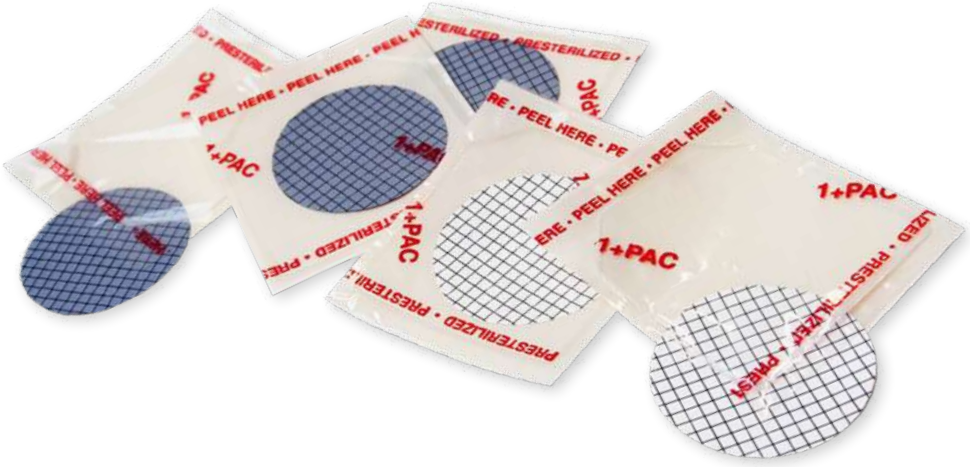
Pore size selection guide

The technical requirements for membranes used in microbiological quality control are subject to strict national and international standards. At the same time the requirements of the market is continually changing as a result of the introduction of new products.

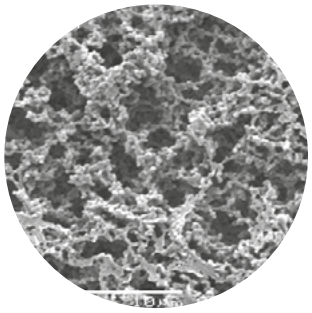
GVS provides a wide and versatile range of membrane filter products to supply the market needs. Our R&D department is continually developing new products for the evolving markets. All GVS membranes consist of high quality materials with a high degree of biocompatibility and are manufactured in ISO certified facilities to ensure reliable performance each and every time.

Test strains: Bacteria/Yeasts	Pore size [µm]			Used for Validation	Standards
	0,2	0,45	0,8		
Brevundimonas diminuta	x				DSM 1635
Pseudomonas diminuta	x			x	ATCC 19146
Escherichia coli (E. coli)	o	x		x	ATCC 29522
Lactobacillus fermentum	o	x			ATCC 9338
Pseudomonas aeruginosa	x				ATCC 10145
Staphylococcus aureus	o	x		x	ATCC 25923
Enterococcus faecalis	o	x			ATCC 19433
Enterobacter aerogenes	o	x			ATCC 13048
Serratia marcescens	o	x		x	ATCC 14756
Streptococcus faecalis	o	x			ATCC 19433
Pediococcus cerevisiae	o	o	x		ATCC 43013
Pediococcus acidilactici	o	x			ATCC 33314
Legionella pnuemophila	x				ATCC 33153
Bacillus subtilis	o	o	x	x	ATCC 6633
Salmonella abony	o	x			NCTC 6017
Saccharomyces cerevisiae	o	o	x	x	DSM 1848
Candida albicans	o	o	x		ATCC 10231
Zygosaccharomyces bailii	o	o	x		ATCC 42476
Aspergillus niger	o	o	x		ATCC 16404
Total count detection		x			

x=recommended pore size
o=alternative pore size



Mixed Cellulose Esters (MCE) Membrane



MICRON
NC (MCE) Sep
Membrane

GVS Mixed Cellulose Esters (MCE) Filtration Membrane is an unsupported, hydrophilic membrane. Its rapid flow rate and high throughput make it ideal for use in bioburden and sterility testing.

Characteristics

- High flow rate: fast filtration rates
- Uniform pore structure: consistent flow and diffusion rates
- Lot-to-lot consistency

Typical Applications

- Microbiological and particulate analysis
- Black for food and beverage applications

Consistent Uniformity Improves Control and Performance

GVS MCE Filtration Membranes are composed of a mixture of inert cellulose nitrate and cellulose acetate polymers. The uniform microporous structure of these filters provides the fastest flow rates and highest throughputs available in a membrane filter. They are hydrophilic with a noncytotoxic wetting agent and yield extractable levels of less than 4% of their weight. These membranes are autoclavable at 121°C (250°F) for 20 minutes. Sterilized product lifetime is 24 months from sterilization date.

Product Characteristics

Sterilization	Gamma Irradiation or Ethylene Oxide (EtO)
USP Class VI testing	Passed

Performance

Pore Size (µm)	Flow Time (s)	Volume/Vacuum (mL/in Hg)	Flow Rate (mL/min/cm² @ 10psi)	Bubble Point (psi)
0,22	60-136	250/20	11.70-26.51	52-65
0,45	23-46	250/20	34.58-69.16	30-42
0,8	5-18	250/20	88.37-318.13	11-19

Mixed Cellulose Esters membrane - Sterile, white and black
Ordering information

	Individually Packaged Without Pad Gridded					Individually Packaged with Pad Gridded	
Dimensions Packaging	**47 mm 100/pk**	**47 mm 100/pk**	**47 mm 1000/pk**	**47 mm 1000/pk**	**50 mm 1000/pk**	**47 mm 100/pk**	**47 mm 100/pk**
Color	**white**	**black**	**white**	**black**	**white**	**white**	**black**
Pore sizes 0.22 µm	1216720		1214396			1214872	
0.45 µm	1216721	1216719	1214923	1213643	1222980	1215237	1214866
0.8 µm	1216724	1216723		1215590		1225460	

Polyethersulfone (PES) Membrane

ULTRASep
Polyethersulfone
Membrane

GVS Polyethersulfone (PES) Filtration Membrane is hydrophilic and cast from pure polyethersulfone polymer. It is designed to remove particulates during general filtration and its low protein and drug binding characteristics make it ideally suited for use in life science applications.

Product Uniformity and High Sensitivity Maximize Performance

This strong, microporous film asymmetric membrane is constructed from a high-temperature polyethersulfone polymer that is acid and base resistant. Its strength and durability are advantageous during usage that involves aggressive handling or automated equipment. GVS PES Filtration Membrane is naturally hydrophilic without added wetting agents and has low extractables.
Due to its inherent uniform porosity and controlled pore size, GVS PES Filtration Membrane efficiently removes particulates from solutions during general filtration.

Features & Benefits

- Hydrophilic: Eliminates the need for wetting agents that can potentially interfere with analyses
- Low extractables: Ensures test results will not be compromised by wetting agents or other extractables
- Superior burst strength: Protects the integrity of the membrane under high pressure
- Lot-to-lot consistency: Quality checks, both down and across the membrane, ensure dependable results every time

Typical Applications

- Protein and enzyme filtration and sterilization
- Biological fluid filtration and sterilization
- Pharmaceutical sterilization
- Environmental water studies

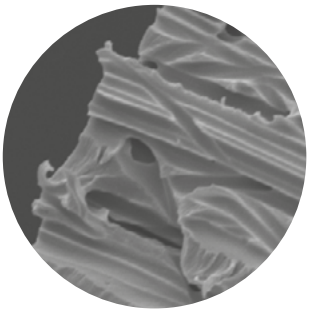
Performance

Pore Size (µm)	Flow Time (s)	Volume/Vacuum (mL/in Hg)	Flow Rate (mL/min/cm² @ 10 psi)	Bubble Point (psi)
0,2	35-70	250/20	22.72-45.45	50-70

Ordering information

Product Code	Pore Size (µm)	Dimension (mm)	Description	Packaging
1226158	0.2 µm	47 mm	PES white sterile single packed	200/pk

Polycarbonate Track Etched (PCTE) Membrane



PORETICS
PCTE Membrane

Characteristics

- Smooth, thin, glass-like surface is suitable for microscopy and cellular applications
- Superior strength allows for aggressive handling
- Resists chemical staining to ease microscopic visualization

Typical Applications

- Legionella test (UNI EN ISO 11731_2017)

GVS Life Sciences Polycarbonate Track Etched (PCTE) Membrane is made from a thin polycarbonate film with precisely defined pores. The proprietary manufacturing process provides increased control over pore size and density for absolute size separation. This unique process ensures the physical properties of each membrane precisely fit specification.

Nominal Product Characteristics

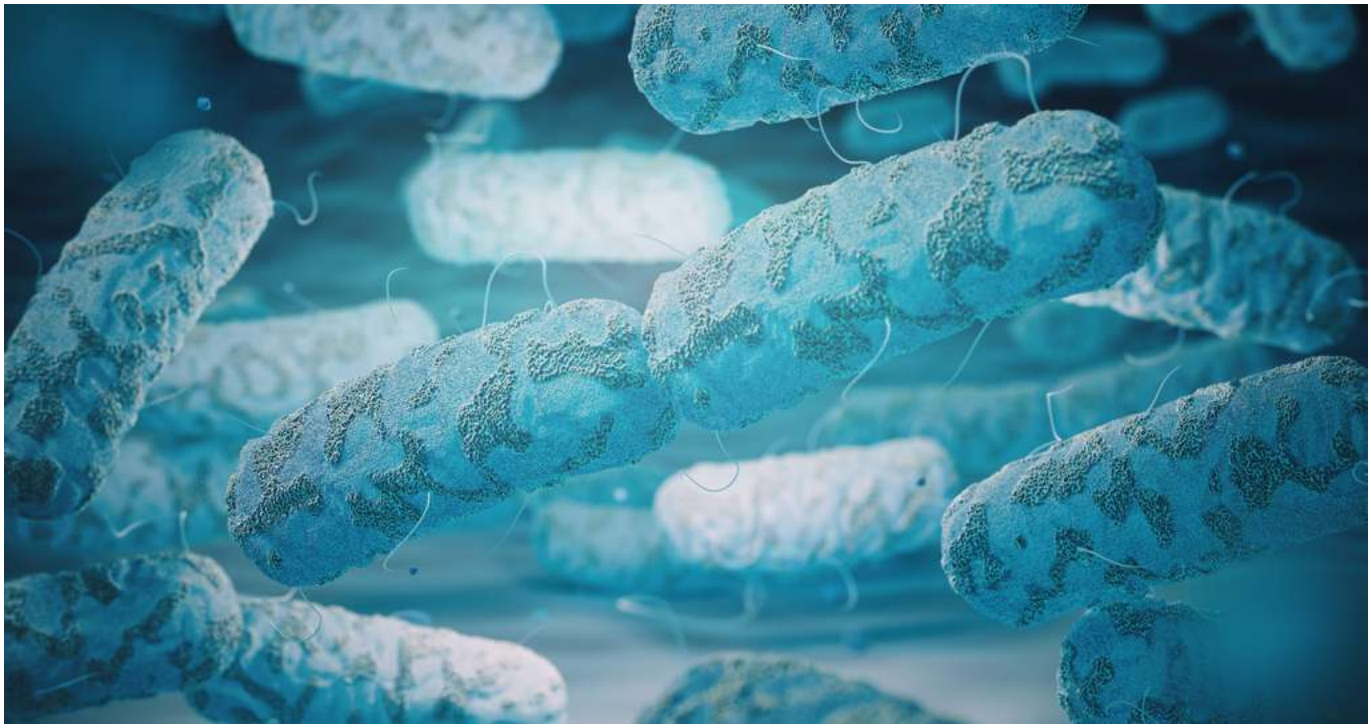
Thickness	10 µm
Optical Properties	Semi-translucent
Maximum Operating Temperature	284°F (140°C)
Sterilization	Gamma Irradiation or Ethylene Oxide (EtO)
Autoclavable	Yes
Wetting Characteristics	Hydrophilic

Ordering information

Product Code	Pore Size (µm)	Dimension (mm)	Description	Packaging
1226157	0.2 µm	47 mm	PCTE white/black gridded sterile single packed	100/pk
1226156	0.4 µm	47 mm	PCTE white/black gridded sterile single packed	100/pk

Enumeration of Legionella

Legionella is a bacterial micro-organism responsible for Legionellosi disease.



The ISO 11731 International Standard Water Quality - Enumeration of Legionella specifies the culture and analysis methods for the isolation of Legionella and enumeration in water samples. Test methods include concentration by membrane filtration, dilution or directly plated.
For direct placing on culture media, ISO 11731 recommends the use of nitrocellulose (NC) or mixed cellulose ester (MCE) membranes for culturing media; diameter of 47mm or 50mm with rated pore sizes of 0.2um or 0.45um.
For concentration and elution: ISO 11731 recommends the use of PCTE or PES membrane filters, diameter 47mm to 142 mm with rated pore sizes of 0.2 µm for concentration followed by a washing procedure.

GVS supplies Sterile membranes for both ISO 11731 Methods in NC(MCE), PCTE and PES.

Determination Method	Membrane
Legionella ISO11731: Concentration Method	PCTE or PES Membrane, 47mm, 0.2um pore size
Legionella ISO11731: Direct Culturing Method	NC or MCE Membrane, 47mm, 0.2um or 0.45um pore size

Nutrient Liquid Media for Culturing and Enumeration

GVS provides as extensive range of culture broths and solutions for the cultivation, detection and enumeration of bacteria yeast, fungi, viruses, pathogens and molds. Each nutrient rich liquid media is specifically developed for use in the analysis of drinking water, surface water, milk, juice, beverages, sugar based drinks, food and pharmaceutical samples.

These ready to use liquid medias are packaged in individual pre-portioned ampoules for ease of use. All liquid medias undergo detailed quality control checks in accordance with standard methods, guaranteeing uniform preparation every time. Comprehensive end product testing ensures a stable sterile liquid media for optimal culture growth.

Quick Media Selection Guide for Common Evaluation Processes and Micro-Organisms

Water, wastewater and purified water

Quality control systems for wastewater analysis and production systems using water. Typical organisms include Pseudomonads, Escherichia coli, Staphylococci, spore formers, yeasts and molds.

Selective microorganism	Positive test organism	Media	Product No.
Acid-tolerant micro-organisms Lactic-acid bacteria	Lactobacillus fermentum (ATCC 9338) Candida albicans (ATCC 10231)	Orange Serum Broth	10496104
Aerobic bacteria	Escherichia coli (E.coli) (ATCC 25922)	HPC Broth HPC Broth with TTC M-TGE Total Count Broth Total Count Media with TTC	10496164 10496151 10496102 10496113
Total Coliforms and Escherichia coli	Escherichia coli (E.coli) (ATCC 25922)	Brilliant Green Bile Broth EC Broth M-Endo Coliform Broth M-FC Broth M-FC Broth with Rosolic Acid MI Broth MI Agar EC Broth with MUG M-TGE Total Count Broth	10496710 10496714 10496103 10496124 10496114 10496192 10496847 10496709 10496102
Enterococci	Enterococci faecalis (ATCC 19433)	Enterococcus Broth	10496120
Fecal Streptococci	Escherichia coli (E.coli) (ATCC 25922) Streptococcus faecalis (ATCC 19433)	KF-Streptococcus Broth	10496125
Pseudomonas aeruginosa	Pseudomonas aeruginosa (ATCC 10145)	Cetrimide Broth Pseudomonas Broth	10496146 10496119
Staphylococci	Staphylococcus aureus (ATCC 25923)	Mannitol Salt Broth	10496121
Yeast and Mold	Zygosaccharomyces bailii (ATCC 58445) Candida albicans (ATCC 10231)	PRY Broth (Preservative Resistant Yeast) M-Green Select Broth M-Green Yeast and Mold Broth	10496106 10496116 10496101

Liquid Media

Soft drinks, fruit juices, concentrates and sugar products

Due to different pHs and carbonation levels the nutrient media for detection of these contaminants are very specific.

Selective microorganism	Positive test organism	Media	Product No.
Acid-tolerant micro-organisms Lactic-acid bacteria Lactobacillus, Oenococcus (product spoiling organisms)	Lactobacillus fermentum (ATCC 9338) Candida albicans (ATCC 10231)	Orange Serum Broth Wallerstein Differential Broth (WLD)	10496104 10496109
Aerobic bacteria	Escherichia coli (E.coli) (ATCC 25922)	HPC Broth HPC Broth with TTC M-TGE Total Count Broth Total Count Media with TTC	10496164 10496151 10496102 10496113
Total Coliform and Escherichia coli	Saccharomyces cerevisiae (ATCC 9763)	Brilliant Green Bile Broth M-Endo Coliform Broth MI Broth MI Agar EC Broth with MUG M-TGE Total Count Broth	10496710 10496103 10496192 10496847 10496709 10496102
Pseudomonas aeruginosa	Pseudomonas aeruginosa (ATCC 10145)	Cetrimide Broth Pseudomonas Broth	10496146 10496119
Yeast and Mold	Zygosaccharomyces bailii (ATCC 58445) Candida albicans (ATCC 10231)	PRY Broth (Preservative Resistant Yeast) M-Green Select Broth M-Green Yeast and Mold Broth	10496106 10496116 10496101
Staphylococci	Staphylococcus aureus (ATCC 25923)	Mannitol Salt Broth	10496121

Beer and Wine

Beer quality control is focused on beer spoiling bacteria like Lactobacilli and Pediococci as well as wild yeast.
Wine quality control is focussed on taste spoiling organisms including acid tolerant species like acetic acid bacterial and lactic acid bacterial as well as yeast and mold.

Selective microorganism	Positive test organism	Media	Product No.
Acetobacter		Orange Serum Broth (add 5-8% ethanol)	10496104
Aerobic bacteria	Escherichia coli (E.coli) (ATCC 25922)	Total Count Media with TTC	10496113
Bacteria in fermentation processes		Wallerstein Differential Broth (WLD)	10496109
Total Coliform and Escherichia coli	Saccharomyces cerevisiae (ATCC 9763) Escherichia coli (E.coli) (ATCC 25922)	M-Endo Coliform Broth M-Endo Coliform Broth MI Broth MI Agar	10496103 10496103 10496192 10496847
Lactobacilli, Pediococci (beer spoiling organisms)	Lactobacillus fermentum (ATCC 9338) Candida albicans (ATCC 10231)	Orange Serum Broth Wallerstein Differential Broth (WLD)	10496104 10496109
Yeast and Mold	Zygosaccharomyces bailii (ATCC 58445) Saccharomyces cerevisiae (ATCC 9763)	PRY Broth (Preservative Resistant Yeast) Wallerstein Nutrient Broth (WLN)	10496106 10496108

Dairy Products

Dairy quality control is focused on the presence of bacteria, yeasts and mold and milk borne diseases. E.coli and Streptococci in dairy products may cause illness or spoilage. Other beneficial bacteria may be specifically added to milk for fermentation to produce products like yogurt and cheese.

Selective microorganism	Positive test organism	Media	Product No.
Aerobic bacteria	Escherichia coli (E.coli) (ATCC 25922)	HPC Broth HPC Broth with TTC M-TGE Total Count Broth Total Count Media with TTC	10496164 10496151 10496102 10496113
Total Coliform and Escherichia coli	Saccharomyces cerevisiae (ATCC 9763) Escherichia coli (E.coli) (ATCC 25922)	M-Endo Coliform Broth Brilliant Green Bile Broth EC Broth MI Broth MI Agar	10496103 10496710 10496714 10496192 10496847
Enterococci	Enterococci faecalis (ATCC 19433)	Enterococcus Broth	10496120
Fecal Streptococci	Streptococcus faecalis (ATCC 19433)	KF-Streptococcus Broth	10496125
Lactobacillus	Lactobacillus plantarum (ATCC 8014) Lactobacillus fermentum (ATCC 9338)	MRS Broth Wallerstein Differential Broth (WLD)	10496112 10496109

Food

Quality control systems for raw materials and final product. Typical organisms include Pseudomonads, Escherichia coli, Staphylococci, Streptococci, yeasts and molds.

Selective microorganism	Positive test organism	Media	Product No.
Acid-tolerant micro-organisms	Lactobacillus fermentum (ATCC 9338) Candida albicans (ATCC 10231)	Orange Serum Broth	10496104
Aerobic, facultative, anaerobic bacteria and fungi	Escherichia coli (E.coli) (ATCC 25922)	Total Count Media with TTC Trypticase Soy Broth (TSB)- Single Strength Trypticase Soy Broth (TSB) - Double Strength	10496113 10496707 10496708
Total Coliform and Escherichia coli	Saccharomyces cerevisiae (ATCC 9763) Escherichia coli (E.coli) (ATCC 25922)	M-Endo Coliform Broth Brilliant Green Bile Broth EC Broth EC Broth with MUG MI Broth MI Agar	10496103 10496710 10496714 10496709 10496192 10496847
Enterococci	Enterococci faecalis (ATCC 19433)	Enterococcus Broth	10496120
Fecal Streptococci	Streptococcus faecalis (ATCC 19433)	KF-Streptococcus Broth	10496125
Lactobacillus, especially in meat	Lactobacillus plantarum (ATCC 8014) Lactobacillus fermentum (ATCC 9338)	MRS Broth	10496112
Pseudomonas aeruginosa	Pseudomonas aeruginosa (ATCC 10145)	Cetrimide Broth Pseudomonas Broth	10496146 10496119
Yeast and Mold	Zygosaccharomyces bailii (ATCC 58445)	PRY Broth (Preservative Resistant Yeast)	10496106
Yeast and Mold	Saccharomyces cerevisiae (ATCC 9763)	Wallerstein Nutrient Broth (WLN)	10496108

Liquid Media

Pharmaceuticals, Raw Materials, Cosmetics

Quality control systems for raw materials and production systems using water. Typical organisms include Pseudomonads, Escherichia coli, Staphylococci, Streptococci, yeasts and molds.

Selective microorganism	Positive test organism	Media	Product No.
Aerobic, facultative, anaerobic bacteria and fungi	Escherichia coli (E.coli) (ATCC 25922)	Total Count Media with TTC Trypticase Soy Broth (TSB)- Single Strength Trypticase Soy Broth (TSB) - Double Strength	10496113 10496707 10496708
Total Coliform and Escherichia coli	Saccharomyces cerevisiae (ATCC 9763) Escherichia coli (E.coli) (ATCC 25922)	M-Endo Coliform Broth MI Broth MI Agar	10496103 10496192 10496847
Enterococci	Enterococci faecalis (ATCC 19433)	Enterococcus Broth	10496120
Fecal Streptococci	Streptococcus faecalis (ATCC 19433)	KF-Streptococcus Broth	10496125
Pseudomonas aeruginosa	Pseudomonas aeruginosa (ATCC 10145)	Cetrimide Broth Pseudomonas Broth	10496146 10496119
Staphylococci	Staphylococcus aureus (ATCC 25923)	Mannitol Salt Broth	10496121
Yeast and Mold Yeast and Mold	Zygosaccharomyces bailii (ATCC 58445) Saccharomyces cerevisiae (ATCC 9763)	PRY Broth (Preservative Resistant Yeast) Wallerstein Nutrient Broth (WLN)	10496106 10496108

Nutrient Liquid Media

2 mL ampouled media

Features & Benefits

- Wide range of products satisfies even special customer requirements
- Optimal media stability, sterility, and reproducibility
- Less time-consuming, higher productivity
- Batch-specific quality certificate in each pack

Liquid Media

Ready-to-use media considerably reduces the preparation time in quality control laboratories and also effectively reduces the risks of cross contamination.
GVS Life Sciences is cooperating closely with quality assurance managers in the industry in the development of its own media and test kits.
This intensive product development has produced a range of products that is being used to monitor production plants and conduct microbiological checks on raw materials through to final product release in laboratories.

Typical Applications

Microbiological analysis of:

- Drinking water
- Surface water
- Recreational water
- Purified water
- Beverage distilled and non distilled

Liquid Media Descriptions

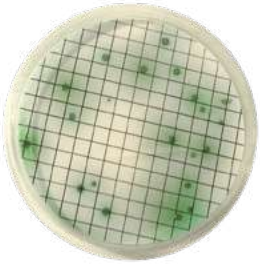
Brilliant Green Bile Broth 2%

Brilliant Green Bile Broth is used to detect coliforms in water, milk and other samples. BGBB contains two inhibitors of both gram-positive and selected gram-negative organisms, namely, oxgall and brilliant green dye. Fermentation is detected by gas production.

Brilliant Green Bile Broth

Cetrimide Broth

Cetrimide Broth is used for selective cultivation of Pseudomonas aeruginosa. Pseudomonas aeruginosa is characterized by the production of pyocyanin (a blue green, water soluble, non-fluorescent, phenazine pigment) which is stimulated by the inclusion of magnesium chloride and potassium sulfate in the broth. Cetrimide (N-cetyl-NNN-trimethylammonium bromide) is added to inhibit bacteria other than Pseudomonas aeruginosa. Its action as a quaternary ammonium cationic detergent causes nitrogen and phosphorous to be released from bacterial cells other than Pseudomonas aeruginosa.



Pseudomonas Media: Typical Growth of Pseudomonas aeroginosa ATCC 10145

EC Broth

EC (Escherichia coli) Broth is used to detect coliforms and E. coli. EC Broth contains casein peptone as a source of nutrients. Lactose provides the carbohydrate fermented by coliform bacteria and Escherichia coli. In addition, lactose-positive bacteria metabolize lactose with gas formation. Gram-positive bacteria are inhibited by the mixture of bile salts.

EC Broth with MUG

EC Broth with MUG is used to detect Escherichia coli in water, milk and food. The presence of fluorescence using a long-wave UV light source confirms the presence of Escherichia coli and no further confirmation is required. MUG detects anaerogenic strains, which may not be detected in the conventional procedure. Lactose is a source of energy. Casein peptone provides additional nutrients. The mixture of bile salts is inhibiting for gram-positive bacteria, particularly bacilli and fecal streptococci. The substrate 4-methylumbelliferyl-b-D-glucuronide is hydrolyzed by an enzyme, b-glucuronidase, possessed by most Escherichia coli and a few strains of Salmonella, Shigella and Yersinia, to produce a fluorescent end product, 4-methylumbelliferone.

EC-Broth: Vial Left: Control; Vial Right: Broth inoculated with Escherichia coli ATCC 25922

Liquid Media

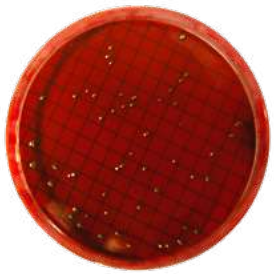
Enterococcus Broth
Enterococcus Broth is a modified version of the improved media described by Slanetz and Bartley with triphenyltetrazolium chloride (TTC). The membrane filtration method is simple to perform, does not require confirmation and permits a direct count of enterococci in 48 hours.

Heterotrophic Plate Count (HPC) Broth with or without TTC
HPC Broth and HPC Broth with TTC Heterotrophic Plate Count (HPC) Broth is used to determine live heterotrophs in drinking water and other media at incubation temperatures of 35°C. All bacteria grow on HPC with indicator media and produce a red color. This is a result of the precipitation of formazan following the reduction of 2,3,5- TTC by bacteria.

KF-Streptococcus Broth
KF-Streptococcus Broth is selective for the determination of fecal streptococci in polluted surface waters. Maltose and lactose are fermentable carbohydrates, sodium azide is the selective agent and brom cresol purple is the indicator dye.

Mannitol Salt Broth
Mannitol Salt Broth is used to detect presumptive pathogenic Staphylococci. Because of the amount of peptones and beef extract, Mannitol Salt is a nutrient rich medium. Most bacteria (other than staphylococci) are inhibited by the high concentration of sodium chloride. Organisms capable of fermenting mannitol, e.g., Staphylococcus aureus, cause a pH change in the media. With phenol red as the pH indicator the colonies appear with a yellow coloration.

M-Endo Coliform Broth
M-endo Broth is used to detect coliform in water samples. M-Endo is a red colored media, which needs to be stored in the dark to prevent discoloration. Gram-positive bacteria are inhibited on this media by the deoxycholate and lauryl sulfate. The addition of ethanol increases the antibacterial nature of the formulation. Lactose fermenting organisms form aldehydes, which react with Schiff's reagent (basic fuchsin and sodium sulfite) to give red colored zones around the colonies. Coliform colonies are therefore red with a characteristic metallic sheen.



M-Endo Coliform Broth

M-FC Broth
M-FC (fecal coliform) Broth allows the development of fecal coliforms at elevated temperatures (44.5°C).

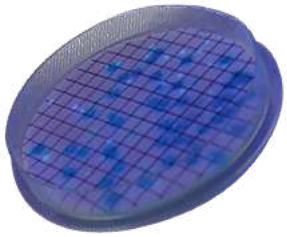
M-FC with Rosolic Acid
M-FC with Rosolic Acid acts and functions in the same way as M-FC Broth. Rosolic acid inhibits bacterial growth in general, except for fecal coliforms.

M-Green Yeast and Mold Broth and M-Green Yeast and Mold Agar
M-Green Yeast and Mold Broth is used to detect yeast and mold in beverages and food. M-Green Yeast and Mold Broth is an improved modification of the liquid media. The addition of bromocresol green, which diffuses into fungal colonies as an alkaline reaction, allows them to be easily identified. Metabolic by-products from the developing colonies diffuse into the surrounding medium, further reducing the pH which aids in the inhibition of bacterial growth, but also produces an acid reaction that causes residual bromocresol green to change to yellow.

M-Green Yeast and Mold Broth: Typical Growth of Candida Albicans ATCC10231 on a Black Membrane

M-Green Select Broth
M-Green Select Broth was developed to improve efficiency of detection and enumeration of fungi in sugar based drinks using the membrane filtration method. This medium has a low pH, which inhibits bacterial growth. The addition of chloramphenicol further inhibits the growth of bacteria to allow for the development and enumeration of yeast and mold.

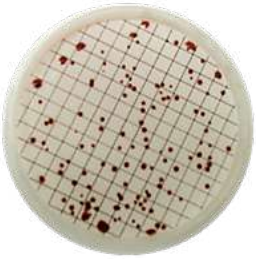
MI Broth and MI Agar
MI Broth detects the presence of coliform bacteria by the production of b-galactosidase, which cleaves the substrate MUGal to produce 4-methylumbelliferone, which fluoresces on exposure to UV light. Non-coliforms do not produce this enzyme and therefore do not fluoresce on the medium. Escherichia coli is detected by the compound IBDG. The b-glucuronidase produced by Escherichia coli cleaves the substrate to produce a blue indigo color in the colonies. As Escherichia coli is also a total coliform, and also produces b-galactosidase, it will also fluoresce. The antibiotic cefsulodin is present to inhibit the growth of gram-positive bacteria and some non-coliform gram-negative bacteria that can cause false positive reactions.



MI-Media: Pure Culture of Escherichia coli ATCC 25922 with UV Light

MRS Broth
MRS medium supports luxuriant growth of all lactobacilli, even the slow growing species.

M-TGE Total Count Media
All bacteria develop on TGE media and produce a range of different colored and sized colonies.



Total Count Media with Indicator. Escherichia Coli ATCC 25922 and Staphylococcus Aureus ATCC 25923 can be Easily Detected according to their Red to Pink Colonies

Orange Serum Media
Orange Serum Broth is used to detect aciduric microorganisms.Organisms known to grow in single strength and concentrated juices are lactic acid and acetic acid bacteria and yeast. Lactobacilli, Leuconostoc and yeast have all been identified as spoilage organisms by numerous authors. Orange serum at pH 5.4 to 5.6 has been reported to yield maximum counts of all types of spoilage organisms in mixed cultures and in single culture comparison tests.

PRY Broth
Preservative Resistant Yeast Broth is a low pH selective medium for the detection of spoilage microorganism in beverages and water.

Pseudomonas Broth
Pseudomonas aeruginosa is characterized by the production of pyocyanin (a blue green, water soluble, non-fluorescent, phenazine pigment) which is stimulated by the inclusion of magnesium chloride and potassium sulfate in the broth. Irgasan, an antimicrobial agent, selectively inhibits gram-positive and gram-negative bacteria other than pseudomonads. Glycerol both serves as an energy source and helps in the promotion of pyocyanin.

Total Count Media with TTC
All bacteria develop on Total Count Media with indicator and produce a red color as a result of the precipitation of formazan following the reduction of 2,3,5- TTC by bacteria.

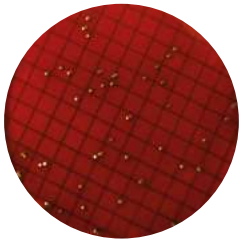
Trypticase Soy Broth Double Strength (not Innoculated)

Trypticase Soy Broth – Single Strength
General purpose medium used in qualitative procedures for the cultivation of fastidious and non-fastidious microorganisms. Trypticase Soy Broth – Single Strength complies with the demands of the DIN Norm 10167 for the detection of Escherichia coli serotype 0157:H7 in foods and FDA-BAM for the isolation of enterohemorrhagic Escherichia coli (EHEC). In addition the media conforms to the formula of the US Pharmacopoeia.

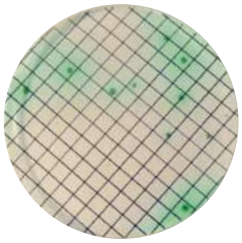
Trypticase Soy Broth – Double Strength
TSB is a medium that will support the growth of a wide variety of microorganisms including aerobic, facultative, and anaerobic bacteria and fungi.

Wallerstein Nutrient Broth (WL) and WL Differential Broth (WLD)
WL Nutrient Broth is for the cultivation and enumeration of yeast and WL Differential Broth is for determination of bacterial count. Use of the medium at pH 5.5 and incubation at 25°C will give reliable counts for brewer's yeast. Adjustment of the pH to 6.5 and incubation at 30°C allows for the selective growth of baker's and distiller's yeast.

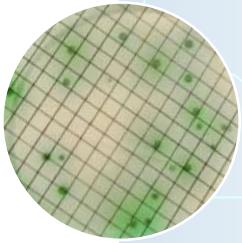
Liquid Media Selection Guide



M-Endo Coliform Broth
Cat. No. 10 496 103
Coliform bacteria
E. coli ATCC 25922,
E. aerogenesATCC 13048,
P. aeruginosa ATCC 10145

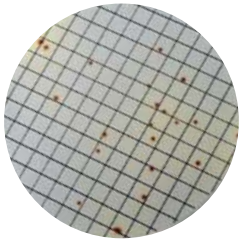


Cetrimide Broth
Cat. No. 10 496 146
Pseudomonas aeruginosa
P. aeruginosaATCC 10145

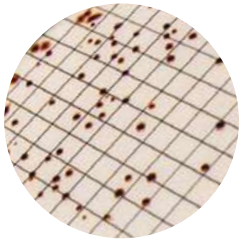


Pseudomonas Broth
Cat. No. 10 496 119
Pseudomonas
P. aeruginosaATCC 10145,
P. aeruginosaATCC 27853

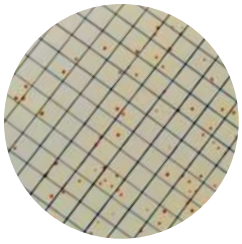
PRY Broth
Cat.No. 10 496 106
PRY
Z.Bailii ATCC 58445



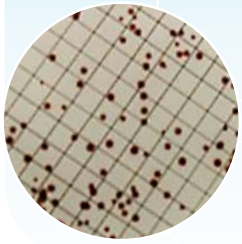
Enterococcus Broth
Cat. No. 10 496 120
Enterococci
E. faecalisATCC 19433



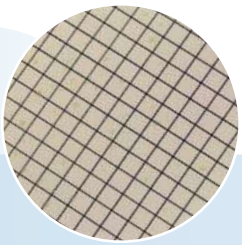
HPC Broth with TTC
Cat. No. 10 496 151
Heterotrophic Plate Count
E. coli ATCC 25922, E. faecalis
ATCC 29212, S. aureusATCC 25923



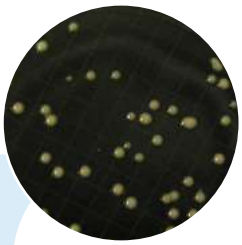
KF-Streptococcus Broth
Cat. No. 10 496 125
Fecal streptococci
E. faecalisATCC 29212,
E. faecalisATCC 19433



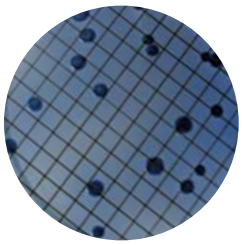
Total Count Media with TTC
Cat. No. 10 496 113
All aerobic bacteria
E. coli ATCC 25922, S. aureusATCC 25923,
P. aeruginosaATCC 10145,
E. faecalisATCC 29212



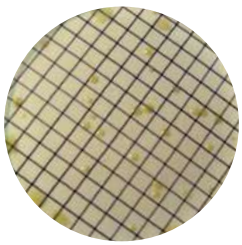
Mannitol Salt Broth
Cat. No 10 496 121
Staphylococci
S. aureusATCC 25923,
S. epidermidisATCC 12228



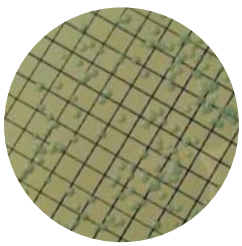
Potato Dextrose Broth
Cat. No. 10 496 138
Yeast and Mold
S. cerevisiaeATCC 4098,
C. albicansATCC 10231



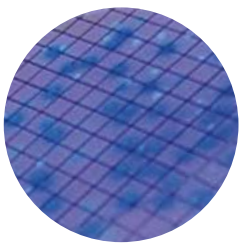
M-FC Broth/M-FC Broth
with Rosolic Acid Cat.
No. 10 496 124/114 Fecal coliforms
E. coli ATCC 25922,
E. aerogenes ATCC 13048



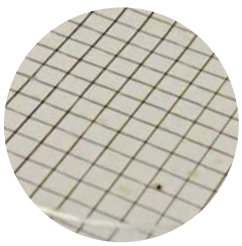
M-TGE Total Count Media
Cat. No. 10 496 102
All aerobic bacteria
E. coli ATCC 25922,
S. aureusATCC 25923



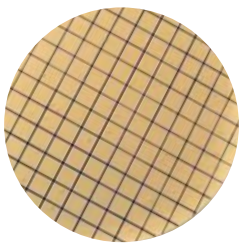
M-Green Yeast and Mold
Cat. No. 10 496 101
Yeast and Mold
C. albicans ATCC 10231,
S. cerevisiaeATCC 9763



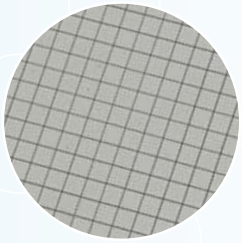
MI Broth and MI Agar
Cat. No. 10 496 192/847
Coliform bacteria and Escherichia coli
E. coli ATCC 25922,
E. aerogenesATCC 13048



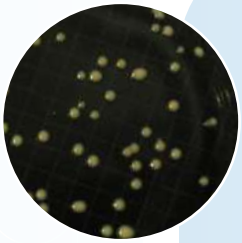
MRS Broth
Cat. No. 10 496 112
Lactobacilli
L. plantarum ATCC 8014



Orange Serum Media
Cat. No. 10 496 104 Various
L. acidophilusATCC 314,
S. cerevisiaeATCC 9763



Wallerstein Differential Broth
Cat. No. 10 496 109
Lactobacillus plantarum
E. coli ATCC 25922,
L. fermentum ATCC 9338,
S. cerevisiaeATCC 9763



Wallerstein Nutrient Broth
Cat. No. 10 496 108
Sacchromyces cerivisiae
E. coli ATCC 25922,
L. fermentum ATCC 9338,
S. cerevisiaeATCC 9763

Trypticase Soy Broth
Single Strength
Cat. No. 10 496 707
B. subtilis ATCC 6633,
C. albicansATCC 10231,
E. coli ATCC 25922,
S. aureus ATCC 25923

Trypticase Soy Broth
Double Strength
Cat. No. 10 496 707
B. subtilis ATCC 6633,
C. albicansATCC 10231,
E. coli ATCC 25922,
S. aureus ATCC 25923

Brilliant Green Bile Broth 2%
Cat. No. 10 496 710
Coliform bacteria
E. coli ATCC 25922,
E. aerogenesATCC 13048

EC Broth
Cat. No. 10 496 714
Coliform bacteria
E. coli ATCC 25922,
E. aerogenesATCC 13048

EC Broth with MUG
Cat. No. 10 496 709
Escherichia coli
E. coli ATCC 25922

Hygiene SwabCheck
Cat. No. 10 498 407

Coliform SwabCheck
Cat. No. 10 498 406

Listeria SwabCheck
Cat. No. 10 498 408

Buffer Swabs
Cat. No. 10 498 305/10 498 306

Neutralizing Buffer Swabs
Cat. No. 10 498 303/10 498 304

Legend

- Water
- Beverages
- Food
- Wastewater
- Dairy
- Pharmaceutical
- Cosmetics

Liquid Media

2 mL Ampoules
Ordering information

Product Code	Description	Packaging
10496146	Cetrimide Broth	50/pk
10496120	Enterococcus Broth	50/pk
10496164	Heterotrophic Plate Count (HPC) Broth with TTC	50/pk
10496151	HPC Broth	50/pk
10496125	KF-Streptococcus Broth	50/pk
10496121	Mannitol Salt Broth	50/pk
10496103	M-Endo Coliform Broth	50/pk
10496124	M-FC media	50/pk
10496114	M-FC Broth with rosolic acid	50/pk
10496116	M-Green Select Broth	50/pk
10496101	M-Green Yeast and Mold Broth	50/pk
10496192	MI-Broth Media	50/pk
10496112	MRS Broth	50/pk
10496102	M-TGE Broth	50/pk
10496104	Orange Serum Broth	50/pk
10496106	PRY Broth	50/pk
10496119	Pseudomonas Broth	50/pk
10496113	Total Count Broth with TTC	50/pk
10496108	Wallerstein Broth	50/pk
10496109	Wallerstein Differential Broth	50/pk

9 mL Vials
Ordering information

Product Code	Description	Packaging
10496710	Brilliant Green Bile Bottled Broth, with Durham tubes	20/pk
10496714	EC Bottled Broth, with Durham tubes	20/pk
10496709	EC with MUG, Bottled Broth	20/pk

Bottled Media
Ordering information

Product Code	Description	Packaging
10496851	MI Media, Bottled Broth, 50 mL,	1/pk
10496847	MI Media, Bottled Agar, 50 mL	1/pk
10496705	M-Green Yeast and Mold Bottled Agar, 100 mL	1/pk
10496707	Trypticase Soy Broth (TSB) Single strength, Bottled Broth, 100 mL	1/pk
10496708	Trypticase Soy Broth (TSB) Double strength, Bottled Broth, 100 mL	1/pk
10496744	ColiCheck with MUG, Presence-Absence (P-A) Test Kit with Sample Bottles	30/pk

SwabCheck™

The SwabCheck principle

The surface is wiped with a cellulose swab and any bacteria collected are transferred via the swab into a tube containing a special medium with an indicator dye, which is then incubated. A single bacterium is sufficient to cause a color change. This means that SwabCheck is about 1000 times more sensitive than the conventional ATP method. This accuracy is particularly important in the food industry. With this simple method, it is possible to identify microorganisms such as Listeria monocytogenes, which must not be present in any concentration in food and beverages.

SwabCheck: how to use

Open the sterile pack, remove the swab and wipe it over an area of about 10 x 10 cm.Then twist off the cap of the medium tube and insert the swab so that the cap fits tightly. Label the sample tube and incubate at the appropriate temperature.

A change in color indicates the presence of the microorganism in question. The quicker the color change occurs, the higher the bioburden. If no color change has been observed after the maximum incubation period has elapsed, then the corresponding microorganism is not present. GVS Life Sciences offers SwabCheck in packs of 25 pieces. With a shelf-life of 12 months.

Features & Benefits:

- The right test for each type of contamination
- Qualitative and semi-quantitative hygiene control
- Sterile packed and ready-for-use
- Easy to handle
- Rapid results
- Long shelf-life

Neutralizing Buffer Swabs

Neutralizing buffer swabs are used in the monitoring of surfaces for total bacterial count. Neutralizing buffer inactivates the bactericidal and bacteriostatic effects of chlorine and quaternary ammonium detergents. Without exhibiting toxic effects on microorganisms. This permits the transfer of swabbed organisms to the laboratory without loss in viability. Neutralizing buffer is not designed to culture and enumerate microorganisms.

Total Count Swab Kit

Buffer Swabs

Buffer Swabs are used for the collection of surface contamination from flat or convoluted surfaces prior to transport to a laboratory for culture and enumeration. Buffer swabs contain no bacteriostatic or bactericidal compounds and cannot suppress the action of detergents.

SwabCheck

SwabCheck is used as an indication of hygiene on contact surfaces. SwabCheck changes color from purple to yellow. The color change is based on acid reaction with the indicator. The more rapid the color change, the higher the level of bacteria in the sample. SwabCheck is useful in determining the sanitation levels of preparation surfaces, filling ports, and processing areas in beverage and food processing plants, dairies, restaurants, and healthcare facilities.

Coliform SwabCheck

Coliform SwabCheck

Escherichia coli and coliforms are used traditionally as indicator organisms for fecal contamination in water and other environmental samples. Detection of these organisms usually points to poor hygiene at some stage in the production process or pollution of water at source. The presence of coliforms is indicated by a color change from brown to yellow. The more rapid the color change the higher the level of coliform bacteria.

Hygiene SwabCheck

Easy to use: The Hygiene SwabCheck shows an obvious color change from red to yellow. The time taken for this change is an indication of the level of contamination. This should be used in conjunction with known specification levels of your process/ product. Rapid screening hygiene test is a same day test that will detect gross bacterial and fungal contamination of work surfaces, equipment machinery or other sampling sites.

Swabs

Listeria SwabCheck
Listeria Isolation SwabCheck is designed to be used alongside traditional selective methods to improve the quality system and minimize the risk of Listeria contamination. This simple to use diagnostic test can be applied anywhere in the environment and on foodstuffs where the presence of Listeria species would be critical.
Listeria sp and specifically Listeria monocytogenes are rapidly becoming the most important pathogen in the food industry; regulatory bodies from around the world are insisting that all food products are Listeria free. Listeria Isolation SwabCheck works on an enhanced Esculin media formulation. The hydrolysis of esculin gives a distinctive black/brown precipitate. Inhibitors and antibiotics are present in the media, which will inhibit the growth of non-Listeria species.

SwabCheck Escherichia coli
SwabCheck Escerichia coli is used for the detection of Escherichia coli on surfaces. The presence of fluorescence using a longwave UV light source confirms the presence of Escherichia coli and any further confirmation is not required. MUG detects anaerogenic strain that may not be detected in the conventional procedure. Lactose is a source of energy. Casein peptone provides additional nutrients. The mixture of bile salts is inhibiting for gram-positive bacteria, particularly bacilli and fecal streptococci. The substrate 4-methylumbelliferyl-b-D-glucuronide is hydrolyzed by an enzyme, b-glucuronidase, possessed by most Escherichia coli and a few strains of Salmonella, Shigella, and Yersinia, to produce a fluorescent end product, 4-methylumbelliferone. The presence of Escherichia coli is detected by the appearance of fluorescence throughout the tube.

Total Count Swab Kit
Total Count Swab Kit is used for the non-selective development and enumeration of all aerobic bacteria on surfaces in accordance with Hazard Analysis and Critical Control Points (HACCP). The kit includes the swabs and culture medium, packaged with a membrane device, providing a quantitative result. All bacteria develop on TGE media and produce a range of different colored and sized colonies. It is not possible using TGE to presumptively identify any bacteria. Identification can only be undertaken using traditional microbiology techniques following initial colony development.

Hygiene SwabCheck

Yeast and Mold Swab Kit
Yeast and Mold Swab Kit is used for the enumeration of yeast and molds on surfaces in accordance with HACCP. The kit includes the swabs and culture medium, packaged with a membrane device, providing a quantitative result. M-Green yeast and mold is an improved modification of the liquid medium, and was developed to improve efficiency of detection and enumeration of fungi in sugar based drinks using the membrane filtration method. This medium has a low pH, which inhibits bacterial growth. The addition of bromocresol green, which diffuses into fungal colonies as an alkaline reaction, allows them to be easily identified. Metabolic by-products from the developing colonies diffuse into the surrounding medium, further reducing the pH that aids in the inhibition of bacterial growth, but also produces an acid reaction that causes residual bromocresol green to change to yellow. Green opaque colonies against a yellow background are indicative of the growth of yeasts. Mold colonies are green and filamentous.

Listeria SwabCheck

Yeast and Mold Swab Kit

Polywipe Sponge
Polywipe Sponge is used for the recovery of microorganisms from a surface. Polywipe is a blue sponge that is premoistened with neutralizing buffer to neutralize the effects of surface disinfectants. The sponge material is selected to be free of the preservatives found in commercially available sponges, which can inhibit microorganism growth. Polywipe sponges are biocide free and tested for zero toxicity to microorganisms. Each sponge is individually wrapped in a peel pouch and gamma irradiated to ensure sterility.

Polywipe Sponge

Buffers

Buffers Ordering information

Product Code	Description	Volume	Quantity
10498303	Neutralizing Buffer Swabs	4 mL	125/pk
10498304	Neutralizing Buffer Swabs	4 mL	500/pk
10498305	Buffer Swabs	4 mL	125/pk
10498306	Buffer Swabs	4 mL	500/pk

SwabCheck Ordering information

Product Code	Description	Volume	Quantity
10498404	SwabCheck	4 mL/tube	125/pk
10498402	SwabCheck Escherichia coli	4 mL/tube	125/pk
10498315	Total Count Swab Kit	2.8 mL/tube and membrane device	30/pk
10498316	Yeast and Mold Swab Kit	2.8 mL/tube and membrane device	30/pk
10498406	Coliform SwabCheck	Individually wrapped package	25/pk
10498407	Hygiene SwabCheck	Individually wrapped package	25/pk
10498408	Listeria SwabCheck	Individually wrapped package	25/pk
10498521	Polywipe Sponge	Individually wrapped pre-moistened sponge	50/pk

Dilution Bottles

Prefilled sterile dilution bottles are designed for sample dilution of water, dairy products, foods, and pharmaceuticals prior to microbiological testing. Final pH for all solutions is 7.2 pH ±0.2 pH at 25°C. They come in an easy open, flip-top, plastic container with a tamper-evident seal.
Butterfield's Phosphate Buffer contains monobasic potassium phosphate and is used extensively in the food, dairy, and pharmaceutical industries. Offered in 90 ml and 99 ml volumes for easy 1:10 and 1:100 dilutions. It is recommended as a general diluent in laboratory procedures by the Federal Drug Administrations and in the Bacteriological Analytical Manual. This product is prepared according to Standard Methods for the Examination fo Water and Wastewater for use in water testing. Phosphate Buffer with magnesium chloride is used as the diluents for the preparation of dilutions in plate counts in the dairy and food industries. It is recommended by APHA for the recovery of injured microorganisms from dairy and food samples. Contains deionized water, monopotassium phosphate, and magnesium chloride.

Ordering information

Product Code	Description	Volume	Quantity
10498503	Dilution Bottle, Butterfield's Buffer	99 mL	72/pk
10498504	Dilution Bottle, Butterfield's Buffer	90 mL	72/pk
10498505	Dilution Bottle, Phosphate Buffer Magnesium Chloride	99 mL	72/pk

Analytical Funnels

GVS microbiological monitors and analytical funnels provide a complete system solution for liquid sample preparation. Each single-use, pre-sterilized filtering unit consists of a measured filter funnel, base, pad, membrane, removable lid and plug. This all-in-one system easily converts from the 100 mL filtration unit to a petri dish, which can be labeled and incubated for culturing. The GVS funnels meet the standard method requirements for a disposable device.

Each sterile analytical funnel includes a removable NC membrane.

Analytical funnels are ready-to-use 100 ml filtration units with membrane and culturing devices.

After filtration the membrane of the analytical funnel can be used for a wide range of qualitative and quantitative biological analysis.

Step 1

Step 2

Step 3

Step 4

Workflow

1. Sample filtration
2. Remove the upper part from the base
3. Put the base on the membrane lifting device
4. Separate the membrane from the pad and transfer the membrane into a petri dish with a sterile pad

Advantages

- **Saves up to 50% in time**
  - No flaming
  - Ready-to-use
  - Presterilized
- **Safety at work**
  - No flaming
  - Minimizes the risk of cross-contamination
- **Easy Handling**
  - Ready-to-use filtration unit
  - Easy release of membrane

Ordering information

Product Code	Description	Quantity
10497507	Funnel, Nitrocellulose, White/Black Grid Sterile 0.2 µm	50/pk
10497510	Funnel, Nitrocellulose, White/Black Grid Sterile 0.2 µm , individually packaged	50/pk
10497504	Funnel, Nitrocellulose, White/Black Grid Sterile 0.45 µm	50/pk
10497506	Funnel, Nitrocellulose, White/Black Grid Sterile 0.45 µm, individually packaged	50/pk
10497508	Funnel, Nitrocellulose, Black/White Grid Sterile 0.45 µm	50/pk
10497509	Funnel, Nitrocellulose, Black/White Grid Sterile 0.45 µm, individually packaged	50/pk

Microbiological Monitors

GVS microbiological monitors and analytical funnels provide a complete system solution for liquid sample preparation. Each single-use, pre-sterilized filtering unit consists of a measured filter funnel, base, pad, membrane, removable lid and plug. This all-in-one system easily converts from the 100 mL filtration unit to a petri dish, which can be labeled and incubated for culturing. The GVS funnels meet the standard method requirements for a disposable device.

Each sterile monitor includes a NC membrane fixed and welded to the dish.

Monitors are single use, pre-sterilized filtering units with welded fixed membranes and culturing devices.

Microbiological Monitors are ideal for monitoring contaminants in liquid samples from raw materials to finished products. After the filtration is complete, 2 ml of microbiological media is added and the unit is converted into a petri dish for culturing the contaminants collected.

Step 1

Step 2

Step 3

Step 4

Workflow

1. Sample filtration
2. Remove the funnel
3. Add 2 ml of microbiological media
4. Replace the lid and incubate

Advantages

- **Saves up to 70% in time**
  - No flaming
  - Ready-to-use
  - Presterilized
- **Safety at work**
  - No flaming
  - Minimizes the risk of cross-contamination
- **Easy Handling**
  - Ready-to-use filtration unit

Ordering information

Product Code		Description	Quantity
47 mm	56 mm		
10497511	10497603	Monitor, Nitrocellulose, 0.2 µm, white/black grid, sterile	50/pk
10497500	10497600	Monitor, Nitrocellulose, 0.45 µm, white/black grid, sterile	50/pk
10497501	n/a	Monitor, Nitrocellulose, 0.45 µm, white/black grid, sterile, individually packaged	50/pk
10497502	10497601	Monitor, Nitrocellulose 0.45 µm, black/white grid, sterile	50/pk
10497503	10497602	Monitor, Nitrocellulose, 0.8 µm, black/white grid, sterile	50/pk

47 mm Filter Holder - Gravi-Seal™

The GVS polysulfone 47 mm autoclavable filter holder combines The Gravi-Seal filter holder uses a unique gravity held design that allows for one-handed operation with no danger of filter by-pass or sample leakage even when using depth filters.
The filter holder combines the key features and benefits needed in one simple unit, making it a tremendous value. The funnel includes only two components with no required clamps or locking devices to manipulate.
The durable and break-resistant polysulfone (PS) unit is autoclavable and chemically resistant for use in cell culturing and microbiological applications and filtering.
The unit includes graduated up to 350 mL with 50 mL intervals.
Each unit is supplied with a #8 rubber stopper to allow use with standard 1L filter flasks or vacuum systems such as the GVS 3- or 6- place Manifold.

Features & Benefits

- Durable - break resistant, no extra parts to break or wear out
- Uses a 47 mm depth filter disc
- One-handed operation
- Only two parts
- No clamps, wheel locks, or magnets to wear out
- Solid, stable and easy to use

Typical Applications

- Filtering liquids for sterility
- Particle removal
- General filtration
- Autoclavable

Ordering information

Product Code	Description	Quantity
1213865	Gravi-Seal PS Analytical Filter Holder (complete unit): 47 mm	1/pk
1214124	Gravi-Seal PS Analytical Filter Holder (complete unit): 47 mm	3/pk
1213883	Gravi-Seal PS Analytical Filter Holder, Base Only	1/pk
1213882	Gravi-Seal PS Analytical Filter Holder, Funnel Only	1/pk

Monitor and Analytical Funnel Manifold

GVS offers stainless steel manifolds for microbial enumeration. The manifold is available in 3 and 6 positions and can be easily set to have a larger amount of samples capacity.The filter manifolds have been designed specifically for microbiological applications. Filter holder supports accept No. 8 silicone perforated stopper. These devices fit with the microbiological monitors and funnel. The surface is easy to clean and avoid any cross contamination during the analysis.

Features & Benefits

- Easy to clean
- Easy to prevent biofilms
- Simple to use

Typical Applications

- Beer Bottled
- Water Cosmetics
- Pharmaceutical Products Analysis
- Bioburden Testing
- Water Monitoring

Ordering information

Product Code	Description	Quantity
10498763	3-place vacuum manifold	1/pk
10498764	6- place vacuum manifold	1/pk

GVS three- and six- place manifolds are ideal for laboratory applications using filter holders, analytical funnels and other biological monitor filtration devices using a #8 stopper.

Silicon Stopper 8

Product Characteristics

Size	8
Length	25 mm
Top diameter	43 mm
Bottom diameter	36 mm

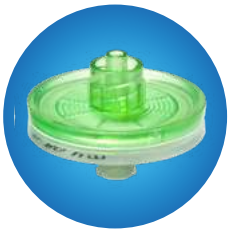
Ordering information

Product Code	Description	Quantity
10498763	Silicon Stopper 8	1/pk

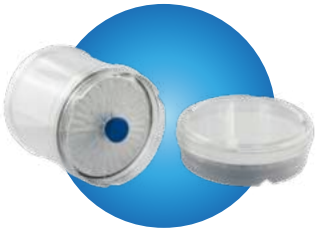
Product Code Index

FILTER TECHNOLOGY

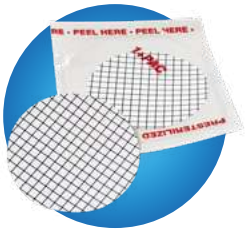
Life Sciences products and capabilities



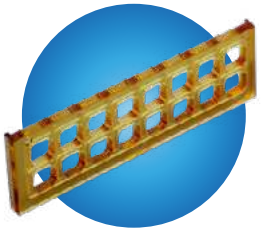
- MICROFILTRATION PRODUCTS: Syringe Filters, Vent Filters, Capsule Filters, Centrifugal Filters, Bottle Top, Filter Holders for Membranes, Filter Funnels



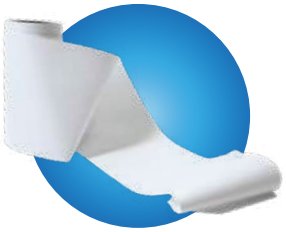
- MICROBIOLOGY: Microbiological Monitors, Analytical Monitors, Nutrient Liquid Media, Swab Kits, Dilution Bottles, Sterile Membranes



- FILTRATION MEMBRANES: Discs, Sheets and Roll, available in a wide range of media: CA, NC, NY, PES, PP, PTFE, RC, PE, Hydrophobic and Hydrophilic PVDF, PCTE, PETE, Silver, Drain Discs, Filter Papers,Glass Fiber/Quartz



- FAST® PROTEIN MICROARRAY



- MEMBRANES in ROLL STOCKS

- CUSTOMIZED DEVICES AND COMPONENTS

- TRANSFER (blotting) MEMBRANES for nucleic acid and protein analysis

For more information on the lifesciences product collection please visit www.gvs.com

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