Millipore®
Preparation, Separation,
Filtration & Monitoring Products

Technical Datasheet

ReadyStream® Media Bag GranuCult® Buffered Peptone Water

acc. ISO 6579, ISO 19250, ISO 21528, ISO 22964, ISO 6887, FDA-BAM and EP (irradiated)

Ordering number: 5.74846.0030 / 5.74846.0100

Intended Use

For use with the ReadyStream® instrument and ReadyStream® filter for the preliminary non-selective enrichment of bacteria, particularly pathogenic Enterobacteriaceae such as *Salmonella* and *Cronobacter*, from food and animal feed, water and other materials and for the dissolving, suspending and diluting of test samples.

Buffered Peptone Water is also known as BPW and Buffered Peptone Medium.

This culture medium complies with the specifications given by EN ISO 6579-1/-2, EN ISO 6887 (all parts), EN ISO 13136, EN ISO 19250, EN ISO 21528-1, EN ISO 22964, FDA-BAM Medium M192, USDA-FSIS, APHA, GB 4789.4, GB 4789.30, GB 4789.40, GB 4789.41 and EP 2.6.31.

Each ReadyStream® media bag contains granulated Buffered Peptone Water for the generation of a liquid 10-fold stock concentrate. The ReadyStream® media bags are only to be used on the ReadyStream® instrument in combination with the ReadyStream® filter set for broth stock reconstitution and final dispensing of a diluted portion of the media.

The product has been irradiated at 33 - 66 kGy.

This product is released by the quality control laboratory of Merck KGaA. The laboratory is accredited by the German accreditation authority DAkkS as registered test laboratory D-PL-15185-01-00 according to DIN EN ISO/IEC 17025 for the performance testing of media for microbiology according to DIN EN ISO 11133.

Mode of Action

The broth is rich in nutrients and produces high resuscitation rates for sublethal injured bacteria and intense growth. The phosphate buffer system prevents bacterial damage caused by changes in the pH of the medium. Peptone including enzymatic digest of casein acts as a source of carbon, nitrogen, vitamins, and minerals whilst sodium chloride maintains the osmotic balance.

The peptone (including enzymatic digest of casein) is carefully selected to attribute to a high buffering capacity to counteract to extreme changes in pH within the growth system.

These pH changes can be caused either by the sample or the metabolite activity of microbial populations during incubation.

In addition, the hydrophilic sodium phosphate buffer incorporated is of high purity and also contributes to a higher buffering capacity of this culture medium.

Typical composition

Specified by ISO 6579, ISO/FDIS 6579-1, ISO 19250, ISO 21528, ISO 22964		Specified by FDA-BAM M192		Specified by EP 2.6.31, ISO 6785 | IDF 93		ReadyStream® Media Bag GranuCult® Buffered Peptone Water acc. ISO 6579, ISO 21528, ISO 22964, FDA-BAM and EP, irradiated	
Enzymatic Digest of Casein*	10 g/L	Peptone	10 g/L	Peptone	10 g/L	Peptone (includes Enzymatic Digest of Casein)	10 g/L
NaCl	5 g/L	NaCl	5 g/L	NaCl	5 g/L	NaCl	5 g/L
Na_2HPO_4 x 12 H_2O	9 g/L	Na_2HPO_4**	3.5 g/L	Na_2HPO_4 x 12 H_2O	9 g/L	Na_2HPO_4 x 12 H_2O	9 g/L
KH_2PO_4	1.5 g/L	KH_2PO_4	1.5 g/L	KH_2PO_4	1.5 g/L	KH_2PO_4	1.5 g/L
Water	1000 mL/L	Water	1000 mL/L	Water	1000 mL/L	Water	n/a
pH at 25 °C	7.0 ± 0.2	pH at 25 °C	7.0 ± 0.2	pH at 25 °C	7.0 ± 0.2	pH at 25 °C	7.0 ± 0.2

* EN ISO 6579-1 specify: Peptone - for example, enzymatic digest of casein.
** 3.57 g Na2HPO4 anhydrous is equivalent to 9 g Na2HPO4 x 12 H20 (di-Sodium hydrogen phosphate dodecahydrate).
*** APHA specifies no composition for Buffered peptone water.

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Preparation

Please strictly follow the recommendations in the ReadyStream® instrument user manual.
The prepared medium ready-to-use (1-fold concentration) is clear and yellowish.
The pH value at 25 °C is in the range of 7.0 ± 0.2.

Experimental Procedure and Evaluation

Depend on the purpose for which the medium is used, e.g. follow directions given by EN ISO standards, FDA-BAM, USDA-FSIS, APHA, GB standards, EP 2.6.31.

Storage and Disposal

Storage (before use): Store at +15 °C to +25 °C, dry and tightly closed. Do not use clumped or discolored medium. Protect from UV light (including sun light). For *in vitro* use only.

Storage of the reconstituted concentrated media bag:
Store at +15 °C to +25 °C for maximum 10 days.*
If the ReadyStream® media bag is removed from the instrument, place the ReadyStream® media bag with the tubing connector facing upwards. Do not stack filled ReadyStream® media bags on top of each other.

After storage, mix to homogenize and visually check for the absence of contaminant.

Filling and dispensing on 2 different instruments is not recommended.
Do not attempt to fill the ReadyStream® media bag more than once.

Please dispose of the bags in accordance with local waste regulations.

*10 days storage time after rehydration for batches higher than AB4AA1, previously storage time was 5 days.

Ordering information

Product	Ordering No.
ReadyStream® Media Bag GranuCult® Buffered Peptone Water (30 L)	**5.74846.0030**
ReadyStream® Media Bag GranuCult® Buffered Peptone Water (100 L)	**5.74846.0100**
ReadyStream® Media Bag GranuCult® Half-Fraser (50 L)	**5.70010.0050**
ReadyStream® Media Bag GranuCult® Tryptic Soy Broth (100 L)	**5.77000.0100**
ReadyStream® Filter Set	**5.74826.0001**
ReadyStream® System	**RDYSTRM01**

Microbiological Performance

The performance test is in accordance with the current versions of EN ISO 11133, EN ISO 6579-1, EN ISO 6887-1, EN ISO 21528-1, EN ISO 22964 and EP 2.6.31.

Test method: **Qualitative single tube method (turbidity) for performance testing of liquid media**					
Function	**Control strains**	**Inoculum**	**Incubation**	**Expected results**	**Specified by**
Productivity	*Escherichia coli* ATCC® 8739™ [WDCM 00012]	≤ 100 CFU	(18 ± 2) h/ (37 ± 1) °C aerobic	Good to very good growth	
	Escherichia coli ATCC® 25922™ [WDCM 00013]	≤ 100 CFU		Good to very good growth	
	Salmonella Typhimurium ATCC® 14028™ [WDCM 00031]	≤ 100 CFU		Good to very good growth	EN ISO 6579-1 EN ISO 19250
	Salmonella Enteritidis ATCC® 13076™ [WDCM 00030]	≤ 100 CFU		Good to very good growth	
	Salmonella Abony NCTC® 6017 [WDCM 00029]	≤ 100 CFU	18 h/ (30 – 35) °C aerobic	Good to very good growth	
	Cronobacter sakazakii ATCC® 29544™ [WDCM 00214]	≤ 100 CFU	(18 ± 2) h/ (34 – 38) °C aerobic	Good to very good growth	
	Cronobacter muytjensii ATCC® 51329™ [WDCM 00213]	≤ 100 CFU		Good to very good growth	

Test method: **Quantitative method for performance testing of diluents**			
Function	**Control strains**	**Incubation**	**Expeced results**
Diluent	*Staphylococcus aureus* ATCC® 25923™ [WDCM 00034]	45 minutes up to 1 hour at (18 – 27) °C (laboratory ambient temperature)	± 30 % of original count (70 - 130 %)
	Escherichia coli ATCC® 8739™ [WDCM 00012]		± 30 % of original count (70 - 130 %)
	Escherichia coli ATCC® 25922™ [WDCM 00013]		± 30 % of original count (70 - 130 %)

Reference medium (inoculum): Tryptic soy agar.

Absence of microbial contamination:
No visual growth after incubation of 500 ml ready to use medium (1-fold concentration).
Incubation: (24 ± 2) hours at (37 ± 1) °C aerobic.

Please refer to the actual batch related Certificate of Analysis.

Literature

APHA (2015) Chapter No. 36: *Salmonella*. and Chapter No. 67: Microbiological media, reagents and stains. Compendium of Methods for the Microbiological Examination of Foods. 5th ed. American Public Health Association, Washington, D.C.

EN ISO International Standardisation Organisation. Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* - Part 1: Horizontal method for the detection of Salmonella spp. + Amendment 1. EN ISO 6579-1:2017/Amd1:2020.

EN ISO International Standardisation Organisation. Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of *Salmonella* – Part 2: Enumeration by a miniaturized most probable number technique. EN ISO/TS 6579-2:2012.

EN ISO International Standardisation Organisation. Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination. EN ISO 6887 (all parts).

EN ISO International Standardisation Organisation. Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 1: General rules for the preparation of the initial suspension and decimal dilutions. EN ISO 6887-1:2017.

EN ISO International Standardisation Organisation. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media + Amendment 1 + Amendment 2. EN ISO 11133:2014/Amd1:2018/Amd2:2020.

EN ISO International Standardisation Organisation. Microbiology of food and animal feed - Real-time polymerase chain reaction (PCR)-based method for the detection of food-borne pathogens - Horizontal method for the detection of Shiga toxin-producing *Escherichia coli* (STEC) and the determination of O157, O111, O26, O103 and O145 serogroups. EN ISO/TS 13136:2021.

EN ISO International Standardisation Organisation. Water quality - Detection of *Salmonella* spp.
EN ISO 19250:2010.

EN ISO International Standardisation Organisation. Microbiology of food chain - Horizontal methods for the detection and enumeration of *Enterobacteriaceae* - Part 1: Detection of *Enterobacteriaceae*. EN ISO 21528-1:2017.

EN ISO International Standardisation Organisation. Microbiology of the food chain - Horizontal method for the detection of *Cronobacter* spp. EN ISO 22964:2017.

FDA-BAM (2023): Chapter No. 5: *Salmonella*. U.S. Food and Drug Administration - Bacteriological Analytical Manual.

FDA-BAM (2023): Chapter No. 29: *Cronobacter*. U.S. Food and Drug Administration - Bacteriological Analytical Manual.

FDA-BAM (2023): Media Index for BAM - BAM Media M192: Buffered Peptone Water (BPW). Food and Drug Administration - Bacteriological Analytical Manual.

National Health and Family Planning Commission of the People's Republic of China.

China Food and Drug Administration. National Standard of the People's Republic of China. National food safety standard — Food microbiological examination: Examination of *Salmonella*. GB 4789.4-2016.

China Food and Drug Administration. National Standard of the People's Republic of China. National food safety standard — Food microbiological examination: *Listeria monocytogenes*. GB 4789.30-2016.

China Food and Drug Administration. National Standard of the People's Republic of China. National food safety standard — Food microbiological examination: Examination of *Cronobacter* (*Enterobacter sakazakii*). GB 4789.40-2016.

China Food and Drug Administration. National Standard of the People's Republic of China. National food safety standard — Food microbiological examination: Enumeration of *Enterobacteriaceae*. GB 4789.41-2016.

Mooijman, K.A. (2012): Culture media for the isolation of *Salmonella*. In: Handbook of Culture Media for Food and Water Microbiology. (Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. eds). pp. 261-286. Royal Society of Chemistry, Cambridge, UK.

To place an order or receive technical assistance

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