



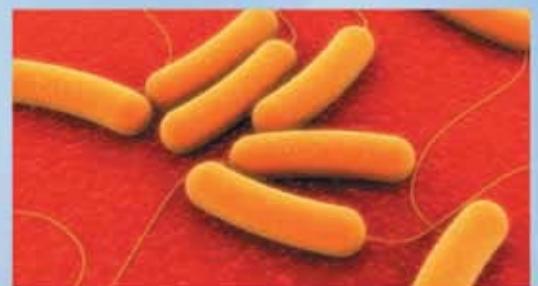
## NRS II™ Transwab®

A new generation of environmental sampling devices for the food and pharmaceutical industries.

- Pre-filled self-standing tubes
- New rayon bud retains integrity in solution
- Optimum sampling, maximum recovery
- Choice of diluent
- Conform to national and international standards



All NRS II™ Transwab® devices feature Medical Wire's new leak proof labelled self-standing screw cap tube made from shatter proof polypropylene, with a highly visible blue shaft swab attached to the cap.



Coliform bacteria

A new generation of environmental sampling

# NRS II™ Transwab®



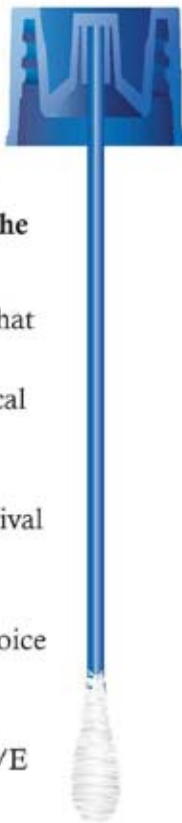
Medical Wire has created a complete new range of environmental sampling devices for the food, pharmaceutical, biotechnology and cosmetic industries. Following on the successful NRS™

Transwabs®, the NRS II™ range introduces a new more compact and convenient format with a choice of diluents to meet the requirements of most regulatory authorities and commercial buyers.

All NRS II™ Transwab® devices feature Medical Wire's new leak proof labelled self-standing screw-cap tube made from shatter proof polypropylene, with a highly visible blue shaft swab attached to the cap.

The swab features a new rayon bud that can remain immersed in liquid, yet maintains Medical Wire's high standard for absorption, survival and release of microorganisms. The tubes are pre-filled with the specified volume of solution, and there is a choice of NRS™ (Medical Wire's classic neutralising rinse solution), Buffered Peptone Water, Butterfield Buffer, D/E Neutralising Broth, Lethen Broth, Maximum Recovery Diluent, or Peptone Saline. A dry swab version is also available for customers who need to use their own formulations.

**NRS II™ prefilled swab devices conform to the requirements of ISO 18593<sup>1</sup>, and other national and international standards.**



- Pre-filled self-standing tubes
- Shatterproof – no fragments to get lost in food or sterile manufacturing areas
- Leak proof screw cap with integral swab
- High visibility blue cap and swab – easy to find and retrieve if accidentally dropped
- New rayon bud retains integrity in solution, yet allows maximum absorption and release of microorganisms
- Optimum sampling, maximum recovery
- Choice of diluents including NRS™ (Neutralising Rinse Solution), Buffered Peptone Water, Butterfield Solution, D/E Neutralising Broth, Lethen Broth, Maximum Recovery Diluent, and Peptone Saline
- Dry swab option
- Conform to national and international standards



Salmonella

A new generation of environmental sampling



## NRS™ (Neutralising Rinse Solution)

NRS™ Medium contains lecithin, polysorbate 80, and sodium thiosulphate in a peptone phosphate buffer. The formulation conforms to ISO 18593<sup>1,2</sup>, and will neutralise most disinfectants used in the food industry, including those based on chlorine, peroxygen compounds, iodine, quaternary ammonium compounds, amphoteric, biguanides, and glutaraldehyde. This is a universal neutralising solution suitable for testing most disinfected areas within the food, cosmetic and pharmaceutical industries. Precise fill volumes allow accurate quantitative assessment of contamination levels.

## Buffered Peptone Water

Buffered peptone water<sup>3</sup> contains peptone and sodium chloride, with a phosphate buffer, and is used for the recovery of Salmonella species, especially in environments where they may have been sub-lethally injured.

## Butterfield Buffer

Butterfield Buffer (also called Butterfield's Solution, or Butterfield's phosphate buffered dilution water) contains potassium phosphate, as specified by APHA<sup>4</sup> and FDA<sup>5</sup>, and is used in standard methods for the enumeration of bacteria and fungi in foods, water, dairy and pharmaceutical products. The standard formulation has been modified by the

inclusion of a low level of peptone to reduce osmotic shock, and polysorbate 80 as a surfactant to assist the sampling process.

## D/E Neutralising Broth

D/E Neutralising Broth<sup>6</sup> (Dey/Engley Neutralising Broth) is an indicator medium, and more complex than NRS. It is used for the neutralisation and testing of antiseptics and disinfectants. Sodium thioglycollate, sodium thiosulphate, sodium bisulphite, lecithin and polysorbate 80 are included as

neutralising components, and it will neutralise quaternary ammonium compounds, phenolics, iodine and chlorine based compounds, mercurials, formaldehyde and glutaraldehyde. Growth is indicated by a colour change from purple to yellow, and / or cloudiness.

## Lethen Broth

Lethen media are used to determine the bactericidal efficacy of quaternary ammonium based disinfectants. Lethen Broth is a growth medium recommended by the FDA for use in the microbiological testing of cosmetics, and the formulation is as described in the FDA Bacteriological Analytical Manual<sup>5</sup>. Polysorbate 80, lecithin and sodium bisulphite are included to partially neutralise the preservatives commonly found in cosmetics.

## MRD (Maximum Recovery Diluent)

Also called Peptone Saline<sup>3</sup>. Maximum Recovery Diluent is an isotonic and protective medium for maximum recovery of microorganisms from environmental and food sources. It is also the recommended diluent for the sampling of carcasses in the European Union<sup>7,8</sup>.

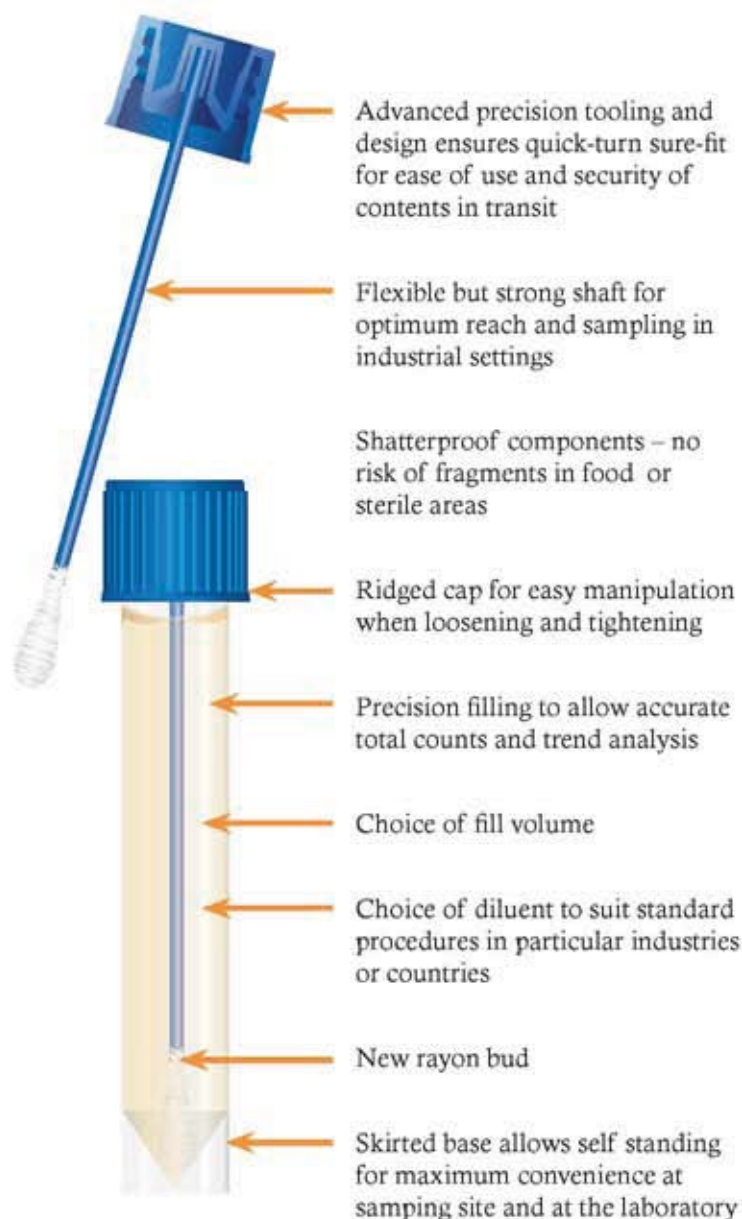


RTE food line

# NRS II™ Transwab®

NRS II™ prefilled swab devices conform to the requirements of ISO 18593<sup>1</sup>, and other national and international standards.

Code	Diluent	Volume in Tube	Pack Size
<b>MW784</b>	NRS	5ml	50
<b>MW785</b>	NRS	10ml	50
<b>MW786</b>	NRS	1ml	50
<b>MW776</b>	Buffered Peptone Water	10ml	50
<b>MW777</b>	Buffered Peptone Water	5ml	50
<b>MW780</b>	Butterfield Buffer	10ml	50
<b>MW781</b>	Butterfield Buffer	5ml	50
<b>MW788</b>	D/E Neutralising Broth	10ml	50
<b>MW789</b>	D/E Neutralising Broth	5ml	50
<b>MW792</b>	Lethen Broth	10ml	50
<b>MW793</b>	Lethen Broth	5ml	50
<b>MW796</b>	MRD (Maximum Recovery Diluent)	10ml	50
<b>MW797</b>	MRD (Maximum Recovery Diluent)	5ml	50



## References

- ISO 18593:2004 *Microbiology of food and animal feeding stuffs – Horizontal methods for sampling techniques from surfaces using contact plates and swabs*. International Standards Organisation, Geneva
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- ISO 6887-1:1999 *Microbiology of food and animal feeding stuffs – Preparation of test samples, initial suspension and decimal dilutions for microbiological examination*. International Standards Organisation, Geneva
- Vanderzant, C. and D.F. Splittstoesser, (ed.). 1992. *Compendium of Methods for the Microbiological Examination of Foods*, 3rd ed. APHA, Washington, D.C.
- U.S. Food and Drug Administration. 2005 Bacteriological Analytical Manual Online [www.cfsan.fda.gov/~ebam/bam-toc.html](http://www.cfsan.fda.gov/~ebam/bam-toc.html)
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- European Commission Regulation (EC) No. 2073/2005 on microbiological criteria for foodstuffs, Official Journal of the European Union L 338/1, 22.12.2005
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