Environmental Swabbing Procedure & Microbiological Testing

General Information for Councils

NRS II™ Transwab *(Neutralising Rinse Solution)*

The NRS II Transwab is a swab submersed in a prefilled screw-cap tube containing neutralsing rinse solution (10mL).
The NRS II Transwab solution contains lecithin, polysorbate 80, and sodium thiosulphate in a peptone phosphate buffer and will neutralize most disinfectants used in the food industry, including those based on chlorine, peroxygen compounds, iodine, quarternary ammonium compounds, amphorterics, biguanides and glutaraldehyde.
This is a universal neutralizing solution suitable for testing most disinfected areas. Precise fill volumes allow accurate quantitative assessment of contamination levels. The NRS II Transwab conforms to ISO 18593, and other national and international standards.

NRS II™ Transwabs must be stored between 5°C to 25°C before use and used within the expiry date. A new unopened NRS II™ Transwab tube should be used for each area/item swabbed. Do not use swabs where the neutralising rinse solution has leaked out, past its expiry date or has been temperature abused.

Used swabs are placed back into the Transwab tube with the NRS medium (sealed tightly), labeled with its sample number, description, time sampled and samplers name. If 2 or more swabs are taken of the same area (considered as one sample), then seal all these swabs into a bag labelled with its sample number, description, time sampled and samplers name. Put samples into a well refrigerated insulated esky (see instructions below) to be sent back to the laboratory for analysis within 24 hours of swabbing.

Sampling sites

Sampling sites should be selected to include all points that are liable to harbor microorganisms that may directly or indirectly contaminate the product. This includes product contact and non-product contact surfaces. Most benefit is obtained by selecting areas that are hard to reach and clean, and surfaces where biofilms are most likely to form.

Product contact surfaces are the most important sites to target however microbial contamination can also be transferred indirectly into product from condensation, drains, floors, cold rooms, line workers garments and so on.

For more information on sampling sites, please refer to Section 6. Environmental Monitoring, FSANZ Compendium of Microbiological Criteria for Food (March 2022).

Examples of sampling sites

Direct product contact surfaces include:	**Non-product contact surfaces include:**
Knives	Exterior of equipment
Conveyor Belts	Walls
Pipeline interiors	Floors
Spoons	Drains
Dispensers	Tools
Product storage containers	Cleaning Tools
Tongs	Workers garments
Trolleys	Structural components of machinery
Fillers	Surfaces overhanging food storage areas
Other Utensils	Conveyors
Cutting Boards	Cold rooms
Bench tops	Pallets
Slicers (and components)	Mats
Mixing Bowls	Switches
Mixers	Locker rooms
Trays	Refrigeration units

Swabbing Procedure

(Note: Wear gloves when sampling to prevent any cross contamination.)

1. Check expiry date and condition of swab. Equipment and food contact areas have been cleaned and sanitized and surface is dry.

2. Label swabs and/or bags and any relevant paperwork appropriately with sufficient details (i.e. sampling site description, time, date, name of sampler etc.).

3. Unscrew cap on the NRS II™ Transwab tube.

4. Remove the sterile swab from the liquid and press out the excess solution against the interior wall of the tube with a rotating motion. Note: Keep hold or carefully place the open tube and liquid on a flat surface while swabbing.

5. Swab the area to be sampled by holding the swab stick to make a 30˚ angle contact with the surface. Rub the swab head slowly and thoroughly over approximately 100cm^2 (i.e. 10cm x 10cm square) of surface, reversing direction between strokes, with gently rotation of the head over the surface to be tested. Results are reported per 10cm^2 .

6. When sampling utensils such as knives and ladles etc, run the swab slowly and firmly three times over the significant surfaces of the utensil, rotating the swab each time. The results of these swabs are usually reported on the basis of the entire sampling site instead of a measured area. (i.e. per swab rather than per 10cm^2).

7. Return the swab to the NRS II™ Transwab tube (still containing the liquid), making sure your fingers do not come into contact with the swab or the swab itself does not come in contact with the outer part of the tube. Prevent the sample from leaking by ensuring the cap has been screwed on the tube securely.

8. Repeat with successive swabs.

9. Place the swabs in a waterproof container, with ice packs, and deliver to the laboratory as soon as possible. Note: If 2 or more swabs are taken of the same area (considered as one sample), then seal all these swabs into a bag labelled with its sample number, description, time sampled and samplers name. Analysis must be performed within 24 hours once surface swabbing has commenced.

What to test for?

It is recommended that swabs be analysed for the following indicator organisms to verify whether effective cleaning and sanitation procedures are in place.

Standard Plate Count
Enterobacteriaceae
Escherichia coli (*E. coli*)
(These indicator organisms can all be analysed from the one swab.)

Specific pathogens such as *Listeria monocytogenes* and *Salmonella* species can be tested. The nature of these tests requires separate swabs to be taken for each pathogen (i.e. a swab for Listeria analysis and a swab for Salmonella analysis).