

vegetables & salads, yoghurt, cheese and milk or other dairy products.

- Swabs taken of hands are normally tested for TMA (Total Microbial Activity). It is recommended that where product handling is significant and the final product is prone to contamination from handling, testing for *E.coli*, Coliforms, and *Staphylococcus* also be done where appropriate. Hand swab results will be expressed as the cfu (colony forming units)/area swabbed, as it is difficult to swab a 10cm² area on a hand (as you would swab in the case of a flat surface). It is important that areas between the fingers and around the nails also be included when the swab is taken, as these are the areas that are mostly neglected during hand washing and disinfection.

Guidelines for interpretation of swab results

The standards available include:

Health Act (Act 63, 1977)	SABS 049
< 100cfu/cm ² (no more than 100 bacteria / cm ²)	<15 cfu / 1000 mm ² Satisfactory 16-75 cfu / 1000 mm ² Fairly Satisfactory < 75 cfu / 1000 mm ² Unsatisfactory Comments: 1000 mm ² = 10 cm ²

Swift's recommendations:

POINTS	BACTERIAL COUNT	COMMENTS
5	<10 cfu / 10 cm ²	Excellent
4	10-70cfu / 10 cm ²	Good
3	71-99cfu/ 10 cm ²	Acceptable
2	100-1000cfu/ 10 cm ²	Unacceptable, requires attention
1	>1000cfu/ 10 cm ²	Unacceptable, requires immediate attention

Services offered by Swift Micro Laboratories

In addition to providing clients with sterile swabs (prepared with neutralizing agent), cooler boxes and ice packs, Swift also offers the following related services:

- Qualified personnel to perform sampling at your premises.
- Training of your staff in aseptic sampling techniques.
- Consultants to assist with tailor-made sampling plans.
- Technical expertise and problem solving.

In conclusion

Microbiological testing must be considered a management system and not just a laboratory procedure. The sampling plan and protocol are as important as the testing method – no level of laboratory sophistication will overcome an inadequate sampling plan and protocol!

Vacancies

Swift currently has two vacancies: one in Gauteng and the other in Cape Town. To apply, send CV to info@swift.co.za.

TECHNICAL SPECIALIST: GAUTENG

As part of the national QMS department, this Gauteng-based position requires experience in Quality Management Systems and particularly HACCP, and a good knowledge of the Food Industry. The candidate must have excellent people as well as presentation skills, as the post requires presentation of training courses (in-house as well as on-site) and consultation (situation analysis, implementation, and pre-audits) in HACCP and related pre-requisite programmes. Must be willing to travel!

MICRO-BIOLOGIST: CAPE TOWN

We are looking for a Microbiologist with the relevant laboratory experience (food microbiology). Previous exposure to a commercial laboratory environment would be an advantage, as would knowledge of laboratory accreditation.

CLOSING DATE FOR BOTH APPLICATIONS: 31 DECEMBER 2005

FOR FURTHER INFORMATION CONTACT:

Swift's marketing department or send an e-mail to info@swift.co.za. Cape Town (021) 689 9344 • Pretoria (012) 349 2334 • www.swift.co.za
The most reliable, affordable solution for microbiological defence.



Staff News



Noor showing off our zooty little Kangoo!

The continued dynamic growth of the company has enabled Swift to create 7 new posts during the last six months!!

In the laboratory we appointed 2 additional laboratory technicians, another microbiologist, and a second sample registrar. This increased the staff compliment in our laboratory to 18 (9 qualified microbiologists, 4 laboratory technicians, 2 laboratory assistants, 2 sample registrars, and 1 in-service student).

Our Cape Town clients have by now met our additional driver and seen our second sample collection vehicle on the roads around Cape Town - you cannot miss the Swift branding on our zooty little Kangoo!

Our ever-growing client base in Cape Town has further necessitated the appointment of 2 additional technical consultants. Marla van der Merwe, who has a Consumer Science and Microbiology background, joined the Marketing & Technical Liaison Department, and Jason Nyman joined our Quality Management Systems Department as trainer and technical specialist.

The increased workload in the Hygiene Department led to the appointment of a national Hygiene Coordinator, who schedules appointments and handles customer liaison for our team of Hygiene Consultants.

Read more about these staff members and other developments at Swift on our web-site, www.swift.co.za

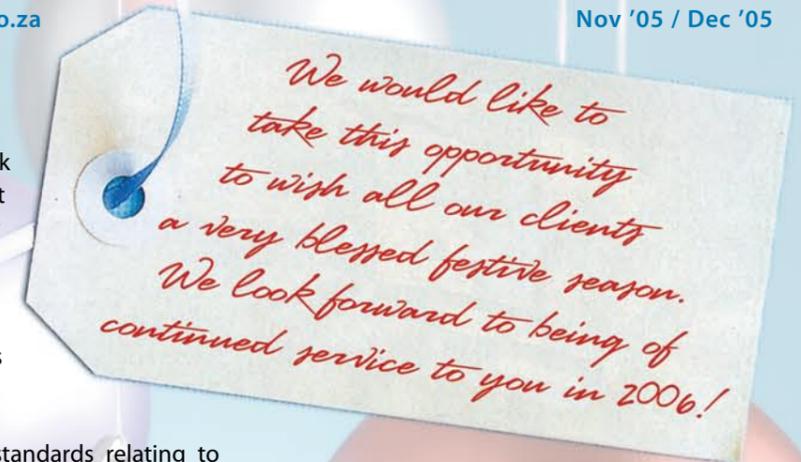
Bug News

THE SWIFT MICRO LABORATORIES NEWSLETTER



www.swift.co.za

Nov '05 / Dec '05



We often receive welcome feedback from our clients about the content of previous articles featured in our newsletter, as well as requests for topics to be featured in future. In this last issue of our newsletter for 2005, we have therefore decided to let our readers dictate the topics of our two main articles.

The first article focuses on the various regulatory standards relating to cleaning chemicals, disinfectants, and detergent-disinfectants currently in use in the food and beverage industry in South Africa. In our "focus on..." article our guest writer discusses some of the most important requirements of the relevant SABS standards which manufacturers must comply to if they claim that their product is registered in terms of Act 29 of 1993.

The second article deals with the use of swabs to verify and validate cleaning and disinfection procedures. Swift receives frequent requests for assistance with implementing programs to measure and monitor the efficacy of these procedures. The simplest and most effective technique to use is the swab technique but, as our article shows, the accompanying sampling plan and protocol are as important as the technique used!

Lastly, the staff news on our back page not only includes information about the seven new posts filled at Swift during the past 6 months, but also features adverts for two current vacancies.

Competition...

One lucky reader will win a **BASIC HYGIENE AWARENESS TRAINING COURSE** for his/her company. The prize includes a 4-hour training course for 15 people, presented on-site at the client's premises. To enter fax your name, company name and contact details, together with the answer to the question below, to us at 021 689-6363 or enter via our web-site.

QUESTION: At what temperature must swabs be stored or kept during transport to the laboratory?

Closing date for entries: 31 December 2005.



Free BASIC HYGIENE AWARENESS TRAINING COURSE FOR 15 PEOPLE



Focus on...

A DISCUSSION OF THE REGULATORY STANDARDS FOR CLEANING CHEMICALS, DISINFECTANTS AND DETERGENT-DISINFECTANTS USED IN THE SOUTH AFRICAN FOOD INDUSTRY

Guest article by André Lambrechts. André is a qualified Environmental Health Practitioner and currently a National Accounts Manager for Ecolab. His field of expertise includes "Food & Beverage related cleaning", CIP (cleaning in place), Environmental Cleaning, Bottle-washing, Chain-lube sanitation, and Livestock disease intervention.



The various standards relating to cleaning chemicals, disinfectants and detergent-disinfectants currently in use in the food and beverage industry in South Africa often cause confusion among users and manufacturers alike.

Firstly, we have legislation in place (**Standards Act, 1993: Act 29 of 1993**) which requires manufacturers to comply with specific codes of standards set by the South African Bureau of Standards (SABS 1828, 1827, 1853, etc.). These SABS codes of standards specify general requirements for cleaning chemicals and disinfectants intended for use in the food industry.

In addition, the **Agricultural Products Standards Act (Act 119 of 1990)** specifies requirements for cleaning chemicals, detergent-disinfectants and disinfectants for use in organic production of foodstuffs, and **Act 36 of 1947 (The fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act)** specifies requirements for products used on animals intended for human consumption.

In this discussion I am going to focus on some of the most important requirements of the SABS standards relevant to Act 29 of 1993. If a product is registered under Act 29 of 1993, it also means that the product complies with the requirement of the relevant SABS standards. Let's look at some of the **requirements of these SABS standards**:

- **Raw materials** used in formulations of cleaning chemicals, disinfectants and detergent-disinfectant products, must be of such a nature that they are suitable for use in food processing plants. Ingredients may not be potentially hazardous or toxic, nor form toxic or potentially toxic reaction products. All raw materials must therefore be assessed to establish if they are harmful.
- Concentrations of materials used may not be such that they can potentially leave **residues**, nor may manufacturers formulate products that can potentially leave residues, which could then be harmful to humans.
- Cleaning chemicals are not allowed inside a food manufacturing plant unless they carry the **relevant SABS mark**.
- Although the SABS codes of standards do not in themselves set cleaning performance efficiencies, cleaning chemicals must, when used according to the manufacturer's recommendations, remove those soils against which they are **claimed to be effective**. The same applies for disinfectants and detergent-disinfectants, which must kill those *organisms* claimed, and detergent-disinfectants must remove the specific *soils* against which they are claimed to be effective. The best method to determine cleaning ability and suitability for a specific application is to test the proposed product in that application, and then use visual and microbiological criteria to assess the results obtained.
- Products that are intended for use on normal unbroken human skin must have a **pH value** at the recommended in-use dilution of between 4 – 9.
- Cleaning chemicals, disinfectants and detergent disinfectants **may not contain any perfumes**, nor leave any objectionable **odors, color or flavor** in food products, if used in accordance with the recommendation of the manufacturer. However, products used in staff amenities of food processing plants can contain perfumes as long as use is strictly limited to staff amenities.
- Cleaning chemicals used at the working concentrations and temperatures recommended by the manufacturer **should not cause pitting, etching or discoloration or increase the mass of the applicable test strip**. (SABS 1828, Clause 5).

Cleaning chemicals, after a storage period of 12 months in the original container at 25°C ± 5°C in the case of a liquid **may not show any separation or thickening, and solids must remain homogeneous**.

- **SABS 1828 and 1853 also require a documented quality system from the manufacturer** that must contain (but is not limited to) the following:
 - a procedure for product manufacture,
 - specifications for raw materials and finished products
 - raw material tests
 - a procedure for work in progress, packaging and labeling,
 - storage of the finished products.
- **Labeling requirements:** Any product labeled as "Dangerous Goods" must contain the relevant United Nations number and proper name. Labels must then also contain the following –
 - indication of whether the product is a cleaning chemical, disinfectant or detergent disinfectant and what type.
 - the purpose for which the product is claimed to be suitable and that the product is suitable for a food processing plant.
 - recommendations for use, hazard warnings if relevant, certification standards by a relevant authority and certification marks.
 - if applicable, the expiry date, manufacturer's name or trademark, batch identification, whether the product is required to be rinsed from food surfaces after use and the appropriate instruction for storage of the product.

CONCLUSION

The government has passed legislation requiring manufacturers to adopt the relevant SABS standards. These codes of standards are separated into cleaning chemicals (SABS 1828), detergent-disinfectants and disinfectants (SABS 1853). Any manufacturer that does not comply with these codes of standards is then in violation of Act 29 of 1993. Therefore if any product is registered under Act 29 of 1993, it also means that the product complies with the requirement of the relevant SABS standard. The SABS codes of standards specify significantly more than I have discussed in this article. The following codes can be used as a source of reference for additional information:

SABS 0228 -	The identification and classification of dangerous substances and goods.
SABS 0229 -	Packaging of dangerous goods for road and rail transportation in South Africa.
SABS ISO 11014-1 -	Safety data sheet for chemical products.
SABS 47 -	Coal-tar type disinfectant liquids
SABS 636 -	Disinfectants based on quaternary ammonium compounds
SABS 639 -	Detergent-disinfectants based on quaternary ammonium compounds
SABS 643 -	Disinfectants based on stabilized chlorine compounds
SABS 1032 -	Detergent-disinfectants based on stabilized inorganic chlorine compounds
SABS1081 -	Detergent-disinfectants based on iodophors.
SABS 1082 -	Detergent-disinfectants based on phenolics.
SABS 1196 -	Detergent-disinfectants based on organic halogen compounds (other than iodine compounds).
SABS 1615 -	Disinfectants based on glutaraldehyde for general use.
SABS 1616 -	Detergent-disinfectants based on glutaraldehyde.

In the Spotlight...



One of the most important parts of any HACCP, BRC or hygiene management system, is the verification and validation of cleaning and disinfection procedures. Swift has received many requests recently to assist clients with the implementation of monitoring programmes for the cleaning and disinfection of food/product contact surfaces.

The simplest and most effective way to measure the efficacy of a cleaning process is with the **swab technique**. Environmental and equipment swabbing can determine equipment/surface cleanliness and contamination potential.

General Guidelines for Swab Programmes

1. Swabbing frequency/Areas swabbed

It is important that surfaces are monitored frequently - a monthly plan is recommended. Microbiological monitoring of the product surfaces during all stages of production should be included in the swabbing plan. High-risk areas should be tested more frequently than lower risk areas (e.g. low risk areas can be tested every third month whereas high risk areas must be tested every month). Swabs should only be taken of surfaces that have been cleaned and disinfected, unless the results are to be used for problem solving purposes. Another important aspect of a swab programme is to follow it up with a corrective action plan. When high bacterial growth is detected on certain areas, the cause should be investigated and the area re-swabbed after the implementation of the corrective action.



A factory being cleaned with chemicals that carry the relevant SABS mark

2. Materials needed for swabbing

- Sterile plastic swabs are provided by Swift or can be bought at any supplier of microbiological materials. Swabs should be dipped in a neutralizing agent before use. This is necessary to eliminate the effect of residual disinfectants on the surface being swabbed. Swabs provided by Swift have already been dipped in this neutralizing agent.
- A permanent marker is needed to label swabs.
- A polystyrene or other insulated container is required for transporting swabs. Frozen ice packs are needed to keep samples cold (below 5°C).

3. Swabbing procedure

The SABS method 763 is followed for the microbiological monitoring of surfaces with the swab technique. Any person taking a swab should first clean and disinfect their hands. The following steps are based on the SABS 763 method:

- Aseptically open the tube that contains the swab, taking care only to touch the "handle" which fits on the outside of the tube covering the swab. Do not touch the

cotton swab or any part of the swab which fits inside the sterile tube.

- The bud of the swabs should be vigorously rubbed over the area sampled. An area of 10cm² (2 cm x 5 cm) should be swabbed.
- While rubbing, rotate the swab to ensure that the whole area of the swab comes into contact with the surface.
- Place the swab back in the tube. Ensure that the fingers do not touch the swab during this procedure.
- Label the swab with the date of sampling as well as the area swabbed.
- Store the swab in a suitable container containing ice packs or in a fridge until transported to the laboratory.
- Transport the swab to the laboratory as soon as possible, while maintaining a cold environment (<5°C) during transport.

THE USE OF SWABS TO VERIFY & VALIDATE CLEANING AND DISINFECTION PROCEDURES.



It is difficult to swab areas that are not flat e.g. filling nozzles, pipes and hands. In these instances it is important to swab as much of the surface as practically possible. The result will then be expressed "per surface swabbed" and not "per 10cm²" as would be the case for flat surfaces.

A word of caution: equipment construction and maintenance may not only make it difficult to clean, but also difficult to swab. Because easily accessed areas normally don't cause cleaning problems, swabs must be taken in hardest-to-clean areas to find if a potential problem exists. Much time is usually spent swabbing areas such as floors and drains, but attention should also be given to elevated areas from which condensate or collected dust could drip or fall onto equipment, raw materials or packaging materials.

4. Transporting and Storing of Samples

Samples should be transported to the laboratory as soon as possible. **Best practice is to have the samples tested within 24 hours after it has been taken.** Samples should be transported at a temperature of between 0-5°C. It is important that all information regarding sample identification, date of sampling, as well as any other relevant information which could affect interpretation of the results, accompany the samples to the laboratory.

5. Tests Required

Many questions arise regarding the bacterial analysis to be done on the swabs submitted to a laboratory. Because the swab technique is used to verify the effectiveness of cleaning and disinfection of surfaces, it is important to determine the total microbial load on these surfaces.

- To determine the bacterial load of a surface, a Total Viable Count (also known as Total Microbial Activity/TMA) test should be done on the swabs. The effectiveness of the cleaning can be rated according to certain guidelines, by doing the TMA test.
- Tests for environmental microorganisms can also be done on swabs. Normally when a product is prone to contamination from environmental microorganisms, it is recommended that the swabs also be tested specifically for these bacteria or yeast & moulds.
- *Listeria* tests are normally recommended for swabs from factories processing/storing perishable products in a chilled environment. A specific *Listeria* monitoring plan is recommended for these factories i.e including a drain swab for *Listeria* testing in the swabbing schedule for the month. Should *Listeria* be detected in the drain, it normally serves as an indication that *Listeria* could be present in the factory. *Listeria* monitoring is recommended for premises processing the following products: red meat, fish, poultry,

Continues on page 4

