In April 2000 the Food Hygiene Division of Applied Chemicals Ltd launched its unique hygiene management system (HMS). For the first time, food manufacturers and processors can now integrate control of all aspects of hygiene management into one system which complies with the new European Food Safety Inspection Scheme (EFSIS).

Today, food companies throughout the world are coming under ever-increasing pressure to demonstrate due diligence, achieve new levels of excellence in customer satisfaction, and still maintain their individual competitive positions in the marketplace. In the UK, all the major multiple food buyers require approval of their suppliers against a recognised standard before they will accept any of their products. The EFSIS standard provides this recognition in the UK and anywhere in the world.

EFSIS was established in 1989 in a collaborative move by the Camden and Chorleywood Food Research Association (CCFRA) and the Meat and Livestock Commission (MLC). The scheme is now assessed to EN45004 by UKAS with respect to the EFSIS Standard for Companies Supplying Food Products; the BRC Technical Standard for companies supplying Retailer Branded Food Products; and the BMMA Standard for Meat Manufacture.

HMS’s developer, the Food Hygiene Division of Applied Chemicals Limited, is a leading supplier of hygiene services to high-risk food processors and major food retailers. The services it provides include nationally recognised training courses, microbiological testing in a UKAS accredited laboratory, chemical distribution and automated monitoring systems, and site hygiene audits, which all complement its new HMS computerised management software.

Applied Chemicals, the Food Hygiene Division’s parent company, is an international group supplying an extensive range of high quality chemical products and services to improve industrial process efficiency and environment hygiene. Applied Chemicals was founded in 1945 and is headquartered in Australia; it has operations centres in the UK, Republic of Ireland, The Netherlands, Belgium, Spain, Sweden, Norway, New Zealand, Singapore and Malaysia. The Applied Chemicals group has more than 2,000 individual product lines, employs some 300 people worldwide, and markets its...
products to more than 35 countries. The group’s turnover is currently in excess of £35 million.

The UK operation of Applied Chemicals Limited was established in 1954 at Coventry with manufacturing, warehouse and distribution facilities, research and development laboratories, and over 150 sales and support staff. The UK company worked with BSI and the NACCB on pilot programs for BS7750, and Applied Chemicals was the world’s first company to be registered to ISO 14001/BS7750 for Environmental Management. It was one of the first to be registered under BS5750 and the European Standard ISO 9002 for quality in all aspects of its operations.

**A major growth sector**

The Food Hygiene Division which serves the UK, Republic of Ireland and the Benelux countries, is targeting considerable growth. Its current three-year business plan includes the expansion of its business development group, a doubling of its technical salesforce, and a turnover increase of 50 per cent, by the end of 2001. A significant proportion of this anticipated growth is accounted for by the division’s recently launched HMS software, targeted at the high-care sector of the food industry. This high-care sector includes the sandwiches, fastfoods and ready meals industries.

The HMS software began site testing in early April 2000, by June in the same year several service agreements had been signed up and it was estimated that some several hundred thousand sandwiches and baguettes per week were already being produced in plants operating the HMS software.

To support this growth a carefully recruited territorial salesforce has been increased three-fold over the past two years. Each member of the salesforce has been carefully selected on the strength of a particular food industry expertise, such as, say, water potability. Thus individual members based throughout the UK collectively offer highly skilled resource base which is available to food processors and manufacturers anywhere in the UK, Ireland and the Benelux countries.

**The need for HMS**

Growth of the sandwich industry has been phenomenal and the British Sandwich Association estimates that the sandwich industry is now worth some £2 billion. Since the first automated sandwich production units began operating in the late 1980s, the sandwich industry has been extremely hygiene-conscious, and the industry’s unique twin high-care/low-risk hygiene methodology is now being adopted by other food manufacturers. This trend reflects the growing concern with hygiene among the wider food manufacturing industry sector. The first high volume sandwich sales were through suppliers such as Marks & Spencer, which has been a prime mover in achieving new standards of excellence in all aspects of food production among its suppliers.

Multiple retailers now insist on either their own internal or independent hygiene audits before they will accept products from a supplier. Some form of computerised records are essential for each area of operation. Without them an organisation cannot possibly identify areas for potential improvement in its standards, or evaluate and monitor its future performance. Complying with demands from customers and food safety standards in this way generates vast amounts of data that must be stored and maintained for evaluation or reference purposes. Disparate or paper-based systems cannot possibly cope with managing the combined data associated with even a modest 20,000 units per day sandwich output.

The new HMS software plays a key role in any audit-conscious food organisation’s HACCPs analysis. Audits identify any necessary improvements and may indicate the need for more training or in-depth expertise than is available in-house. Examples include microbiological testing, staff training, production equipment maintenance and performance, as well as the maintenance and performance of the hygiene equipment itself. Applied Chemicals uses independent qualified auditors to carry out full audits of site hygiene, including HACCP procedures, microbiological test protocols, hygiene documentation, hygiene systems and practices, and training records. The advent of EFSIS accreditation has helped to focus attention on the need for formal systems for
food safety as part of a company’s overall quality system.

Applied Chemicals supplies an extensive range of complementary services and the management of these services, together with associated data, is integrated in the new HMS software. For example, when staff qualifications need renewing, or a refresher training course is due for any member of staff, the date-sensitive system will flag this up. Tasks can be apportioned only to members of staff with the relevant training or qualifications necessary to complete specific tasks.

The system’s start-up screen lists all locations throughout the production area, together with lists of individual hygiene tasks in each one, the date on which each task is to be carried out, and the name of the person to whom it has been assigned. Each task has its own screens showing a detailed description of the procedures and the chemical products and dosages to be used. A task scheduler automatically produces daily staff job cards showing individual employees’ tasks for that day. When completed, individual tasks are checked and cleared by the supervisor. The completed task is rated as “acceptable”, “unacceptable” or “not completed”, all task data are entered into the system, and all relevant records are automatically updated.

The new HMS software makes full use of multimedia; for example, videos show how selected tasks should be carried out and procedure descriptions are augmented by icons to emphasise use of gloves, boots and glasses. The system can produce a wide variety of analyses and printed reports including individual staff performance assessments, which are very useful for prompting any necessary staff training programs. A comprehensive help facility is built into HMS, and its suppliers provide an additional telephone hotline for users. An area of the screen is available for on-line information. In the event of an accident during cleaning, vital information about the chemical cleaning agent could be immediately e-mailed to any medical authority dealing with the problem.

The HMS system concerns almost everyone in the workforce in the same way as hygiene and food safety concerns everyone. This is demonstrated by a brief look at the specific objectives of a very basic hazard analysis issued by the Department of Health; this outlines three key central points:

1. **Basic hygiene principles**
   (1) Control of contamination by:
   - cleaning and disinfection;
   - separation of raw and ready-to-eat foods;
   - good personal hygiene of food handlers.
   (2) Good temperature control to limit growth.
   (3) Stock rotation and control of storage life to limit growth of harmful bacteria.
   (4) Good heat processing to destroy microbial contaminants.

2. **Introduce the concept of “control”**
   Business must control and monitor critical points.

3. **Training and supervision**
   There is a basic requirement that all food handlers must be supervised and instructed or trained.
   Everyone in the organisation is concerned with hygiene at some level of responsibility, and access to HMS is restricted accordingly. Users log on by name and password, with four separate security levels:
   (1) user;
   (2) supervisor;
   (3) manager; and
   (4) senior manager.
   A detailed task list records every interaction at every level; records are maintained within the system and cannot be removed, except by authorised Applied Chemicals personnel. In this way it is possible to see who has accessed the system, when, and for how long, and customers are assured that hygiene records cannot be tampered with by the manufacturer.

   Many hygiene or quality assurance managers might consider that installing such comprehensive software and integrating it with existing structures and processes is too big a task to contemplate in an already hard-pressed and busy production plant. But increasingly buyers are only willing to accept products from companies whose standards equal those of EFSIS or similar. Contracts and orders for new products are increasingly agreed subject to successful customer audit, and buyers are in a position to request audits.
at short notice for existing, as well as new, products.

Dave Maher, technical director at Applied Chemicals, addressed this common problem: “This customer audit/supply problem is one we frequently have to deal with”, he says. “We uniquely offer the whole range of hygiene related services in house, and the software is both flexible and user-friendly. Our team of qualified experts will speedily and efficiently customise programmes according to specific customer requirements and sufficient flexibility exists within the system to accommodate changing demands. Resources are on hand within the Applied Chemicals group to deal swiftly with the particular needs of any food-related organisation, whether by the HMS software or by any other associated specialist hygiene product or service.”

**Associated products and services**

The HMS system is supported by technical service teams, comprising staff specially selected for their food industry experience. These are available to solve on-site problems, and a help line service offers immediate access to information, easy-to-follow advice, and technical support.

The company provides nationally recognised hygiene training courses for its customers’ management and staff including Basic, and Intermediate Food Hygiene levels. All courses are tailored to suit individual needs, they can take place either on-site or anywhere in the UK, and are devised and led by professional training personnel. Also, at Coventry, the company operates a comprehensive food product testing service which is accredited by UKAS. This service includes testing of food products, environmental swabs, potable water sample testing, trend analyses, and consultancy to establish and monitor HACCP procedures.

Applied Chemical’s core business is to provide a full range of equipment for industrial hygiene to the food industry, including distribution systems for chemicals, dilution control devices, automated chemical monitoring systems, and foam cleaning equipment. The company also offers preventive maintenance services and a comprehensive “green field” project management service to develop hygiene systems in planned food processing plants.

Hygiene and environmental products available from Applied Chemicals include V12, a terminal rinse disinfectant which is approved by Marks & Spencer for use by its suppliers; Foamclean 7, a neutral foam cleaner with very low environmental loading and health and safety hazard; Coolguard, a thixotropic gel for air handling systems; and Activated Water Biocide, a new full-spectrum biocide based on electrolysis of water.

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