

Controlling chemicals in the cleaning sector – less is more

1 General information

Country: Sweden.

Available languages: Swedish, English.

The **sector covered** in this case study is the cleaning sector.

Task covered: cleaning activities.

Worker groups covered (vulnerable groups): all groups (including migrant workers).

The **purpose of this example of good practice** is to reduce the exposure of workers to cleaning chemicals to the minimum level possible: (a) by the elimination of chemicals from the cleaning process, (b) by reducing the need for cleaning chemicals (using a three-point platform) and (c) through employee training and daily follow-ups by onsite managers.

The **target groups** are workers (females, males, migrant workers).

2 Initiator/organisations involved

Leif Persson, Head of Business Development Cleaning, ISS Facility Services AB, Stockholm, Sweden.

3 Description of the case

3.1 Introduction/background

The ISS Group was founded in 1901 in Copenhagen, Denmark. The cleaning company was formed in 1934. ISS offers a wide range of services such as cleaning, catering, property and support services, and facility management services. There is a long history of cleaning services in the company and, in Sweden, more than 5,000 cleaners, who work across the whole of Sweden, are employed.

Cleaning as an occupation involves different activities, performed in various work environments across all sectors. The level of exposure to chemicals highly depends on the type of products used, as well as on the environments in which the cleaning work is performed (e.g. whether or not there is any ventilation).

According to a report of the European Agency for Occupational Safety and Health (EU-OSHA, 2009), workers in the cleaning sector may be exposed to a broad range of different chemicals, such as hazardous agents in cleaning products (volatile organic compounds, e.g. acetone, formaldehyde and halogenated alkanes), surfactants, film formers (e.g. wax), complexing agents (e.g. EDTA), acids (e.g. hydrochloric acid) and bases (e.g. potassium hydroxide), biocides, and additives such as colour pigments and fragrances. In addition, overdosing, mixing different products and the incorrect use of certain cleaning products may create unexpected chemical reactions and release dangerous substances. These issues are considered in the current case study and — through different measures — the company has successfully lowered the risks to health and the hazards associated with the dangerous chemicals used in cleaning. According to Leif Persson of ISS, the development of cleaning chemicals is moving towards more concentrated products, in order to limit waste and transport costs. This makes ensuring that the correct dose is used more important than ever.

ISS Facility Services AB has been concerned about cleaning products for many decades. Gradually, efforts have been made to minimise or eliminate the chemicals that may have irritant properties (e.g. those that cause irritation of the eyes or mucous membranes), cause skin dermatitis or cause breathing problems (including asthma). Most cleaning chemicals are used either as liquids or as aerosols.

3.2 Aims

At ISS, controlling and reducing the exposure of workers to chemicals during cleaning activities has been a long-term goal. In order to achieve this goal, the main objectives were the following:

- to find methods for cleaning surfaces that do not involve the use of hazardous chemicals (e.g. using 'pure water' and a microfiber cloth instead of chemicals and a regular wiping cloth);
- to train workers in how to handle the chemicals used for cleaning and how to use the correct dose — before the work starts; such training can be carried out by an onsite manager with regular follow-ups;
- to strictly follow the material standards as well as the Swan Ecolabel requirements when selecting suitable chemicals — health issues are a priority.

3.3 What was done and how?

A multifaceted approach has been introduced, which has led to gradual improvements in the handling of chemicals during cleaning work. The key activities can be described as follows:

- *The implementation of a procedure that involves 'pure water' and a microfiber wiping cloth:* the effective use of a microfiber wiping cloth requires a special technique — it has to be folded in the correct way to be effective with 'pure water'. In Sweden, microfiber cloths (also known as 'magic gloves') have been known as effective tools for cleaning since 1995, and, therefore, microfiber has already been used in the cleaning sector for several years. The use of 'pure water', however, was implemented only recently. 'Pure water' is purified water which has undergone reverse osmosis, a process by which water is mechanically treated scientifically treated to remove all trace elements, leaving the water free of all impurities (e.g. calcium, phosphates, nitrates, sodium, potassium and chlorides). 'Pure water' is not a natural form of water — it attracts trace elements in order to replace those lost in the purification process. Therefore, it is effective for cleaning — it actively absorbs and attracts small particles (e.g. dirt).
- *Constant adherence to 'material standards':* in order to pick chemicals suitable for cleaning activities, where the 'pure water' and microfiber method is not applicable, the material standard principle is used. To select a cleaning chemical and keep it among the company's range of cleaning products, a set of requirements in the material standard guidelines is used. Following those guidelines, an external consultant evaluates the product (its toxicity to humans and the environment, any legal issues, etc.). By using consultants, the company ensures that any changes in chemical legislation (e.g. REACH) and the various chemical lists that may concern cleaning chemicals are not missed. The consultant writes a summary report about the decision to accept a product. When a product is accepted by ISS, training material is immediately amended and used to train workers in how to handle the new cleaning product safely. Since 2014, in addition to using external consultant services to select chemicals, the company has used only those products that possess a 'Nordic Swan Ecolabel' (<http://www.nordic-ecolabel.org/>). Some such products used currently at ISS Facility Services AB are as follows:
 - Sani 100 Pur-Eco SD (with Nordic Swan Ecolabel), for cleaning sanitary rooms;
 - Sprint 200 free SD (with Nordic Swan Ecolabel), for cleaning interiors;
 - Jontec 300 free (with Nordic Swan Ecolabel), for floor cleaning.
- *Similar training for all workers across Sweden:* all workers are trained in accordance with similar principles by onsite managers. After the first training session, which ensures that workers understand how to work safely (sometimes, new workers need to demonstrate the correct way of working), managers, as part of the daily routine, must follow up worker training by observing workers' operating methods and checking the quality of their work. All workers are trained in Swedish, including migrant workers. Therefore, migrant workers who cannot speak Swedish cannot be employed by the company.

- *The dosing of concentrated cleaning products:* dosing is ‘an art’ in cleaning. The ‘dosing art’ is explained so that all cleaners are clear that using a concentrated solution does not usually mean that a cleaned surface will be cleaner than if a less concentrated solution had been used. On the contrary, using solutions that are too concentrated can result in a spoiled surface, a surface with a membrane (which attracts dirt) or a surface that has disturbed spots resulting from the cleaning chemical. In order to remove such spots, the cleaner has to put in extra effort and spend more time onsite. Therefore, to ensure that the cleaning job is effective and takes the minimum amount of time possible, it is essential that the correct dose of cleaning chemical is used. At ISS, a three-point platform system is used to make sure that the correct amounts of chemicals are used. The points of this system are as follows:



1. ‘Smart dose’: when the cleaner has to add a concentrated product to a cleaning solution, the container has very clear instructions on how to obtain the correct dose.
2. ‘Quatro select’: when cleaning chemicals are needed on a large scale, ready-to-use solutions are utilised by all cleaners onsite.
3. ‘Intelligible use’: for cleaning machines, dosing is carried out automatically in a closed system.

3.4 What was achieved?

A considerable reduction in the use of hazardous cleaning chemicals has been achieved through the activities implemented by ISS during recent years in order to control the exposure of workers to cleaning chemicals. ISS estimates that they have also saved on the costs of cleaning chemicals, as the amounts used have noticeably decreased. In addition, by following the material standard requirements, the company has been able to avoid all products that might be harmful to human health. Workers now use either ‘pure water’ and microfiber or very limited amounts of chemical cleaning products (which always have a ‘Nordic Swan Ecolabel’).

3.5 Problems faced

The main problems that the company has faced are the following:

- *Migrant workers and their different working ethics:* migrant workers may have a different understanding of cleaning work. Differences in understanding and approaches are sometimes identified in the training period, and routines can be corrected. However, sometimes problems arise later and, in these cases, the onsite manager has to make an extra effort to explain the working principles to migrant workers. It may be difficult to change established routines within a short period, especially among older migrant workers.
- *Migrant workers and their lack of understanding of how microfiber and pure water can be as effective as cleaning chemicals:* most Swedish workers have a high degree of knowledge about the benefits and effectiveness of microfiber wiping cloths, as microfiber has been available on the Swedish market for several years. However, many migrant workers are less familiar with the use of microfiber and therefore extra effort is required to explain how to use it and demonstrate its effectiveness.
- *Ensuring that workers use the most appropriate chemical for a particular cleaning job and have the ability to dose it correctly:* constant check-ups on site are required to make sure that all workers have understood which cleaning methods and chemicals should be used for different work environments and what the effective doses are. Workers have to be constantly reminded about the importance of dosing.

3.6 Success factors and challenges

Since Scandinavian countries have very high standards of occupational safety and health, it has been a genuine process identifying safer and healthier ways of carrying out cleaning work has been a very important process for ISS Facility Services AB in recent years. The success lies in the constant and sustainable implementation of activities to control the handling of dangerous chemicals in the company’s

workplaces. The decision to use only Nordic Swan-labelled products is another reason for success — this label allows the company to select cleaning products from a set of well-assessed products, which can be bought on the basis of environmental and human health reasons, and this drastically simplifies the task of searching for acceptable products.

3.7 Transferability

The approach is transferable to other countries, especially other Scandinavian countries where the Nordic Swan Ecolabel is known and microfiber has been used for several decades, as all cleaners will be familiar with its use; the use of microfiber should also not be a major issue in terms of the transferability of the approach to those countries where microfiber has been introduced only recently.

3.8 Costs and/or economic impacts

ISS has not evaluated the costs.

3.9 Evaluation

The case study:

- is easy to understand for the user;
- has a relatively low cost of the implementation;
- is transferable to other companies/countries;
- involves a realistic work situation;
- focuses on preventing risks at source;
- is targeted to specific problem solving;
- comes from a credible source.

3.10 Further information

Contact

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About ISS: <http://www.se.issworld.com>

4 References and resources

European Agency for Safety and Health at Work (EU-OSHA), 2009. *The occupational safety and health of cleaning workers*. Available at: https://osha.europa.eu/en/publications/literature_reviews/cleaning_workers_and_OSH/view (accessed 14 November 2017).