

Limiting exposure to dangerous substances in the cleaning sector

1 General information

Country: Estonia.

Available language: Estonian.

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

Tasks covered: cleaning activities.

Worker groups covered (vulnerable groups): all groups, migrant workers in the cleaning sector, **80 % of workers are female.**

The **purpose of this example of good practice** was to work safely with chemicals in everyday cleaning activities.

This was achieved through the following activities:

- use of a limited number of cleaning agents;
- use of specially treated water instead of chemical cleaning agents;
- extensive training of workers, with hands-on activities.

The **target groups** are employers, managers, and safety and health managers in cleaning companies.

2 Initiator/organisations involved

Mrs Evely Gorobinski, Head of Human Resources and Quality, SOL Baltics OÜ, Tallinn, Estonia.

3 Description of the case

3.1 Introduction/background

The history of cleaning company SOL began in 1848 in Finland. SOL is a business owned by a Finnish family. In 2001, SOL Eesti was established in Estonia, and SOL Baltics was created in 2015. Nowadays, about 1,700 cleaning workers are employed across Estonia. Additionally, about 90 people work in the administration department in Tallinn, the capital of Estonia.

Historically, cleaning has never been considered a safe and healthy job because of the amount of chemicals used, the physical workload and the inconvenient working hours. According to an EU-OSHA report (EU-OSHA, 2009), the most common safety and health hazards in cleaning work are (1) risk of slips, trips and falls (particularly during 'wet work'); (2) exposure to dangerous ingredients in cleaning materials; (3) exposure to hazardous substances being cleaned; (4) psychosocial issues, including work-related stress, violence and bullying; (5) risk of musculoskeletal disorders; and (6) risks, such as electric shock, from work equipment. This case study is an example that shows how cleaning jobs can be made safer and healthier. The cleaning company on which it focuses introduced measures that gradually achieved safe and healthy working conditions for its cleaners.

Cleaning is often done outside normal working hours, in the early morning, in the evening or at night, and workers may be employed on part-time or temporary contracts and sometimes have more than one job. Such working patterns and conditions can increase health risks.

The majority (80 %) of cleaning workers employed by SOL Baltics are female. The average age tends to be quite high — approximately 51 years — but all age groups are represented. As staff turnover in

the cleaning sector is quite high, it is difficult to define all the characteristics of an average worker. SOL Baltics generally employs cleaning workers who speak either Estonian or Russian, although sometimes migrant workers who speak other languages are hired as well. The standard training package is prepared in either Estonian or Russian. When a worker who speaks another language is hired, training is conducted individually, in a suitable language.

In previous years, the cleaning agents used in the business varied extensively. Some of them contained chemical substances that caused irritation to the skin and eyes and to the nasal and throat mucous membranes. Additionally, chlorine in cleaning and washing preparations (usually sodium hypochlorite) put workers at risk of poisoning. There was also a lack of strict guidelines on how to measure the right dosage of cleaning agents; often, workers measured out too much, which increased exposures to dangerous substances. In addition to the health risks, the use of strong solutions resulted in financial losses, as more of the cleaning agents were used than was necessary.

Hazards physical state: liquids, aerosols.

Hazard health effect: irritating effects, allergic effects. Some workers suffered from allergies, skin rashes, and irritation of the nasal and throat mucous membranes.

Exposure route: dermal and inhalatory exposure.

3.2 Aims

The aim was, taking a holistic, to ensure a reduction in exposures to hazardous chemicals through the following measures:

1. Cleaning agents containing irritating chemicals were replaced with Ultra H₂O for daily cleaning of glass and stainless steel surfaces.
2. Where it is necessary to use cleaning agents, only a small number of selected products are made available to workers.
3. To prevent workers misusing cleaning agents (e.g. using solutions that are too strong in the belief that 'the more you use, the cleaner the surface') and performing incorrect work routines, extensive in-service training is performed.

3.3 What was done and how?

Steps 1 to 5 set out below were followed to implement the new approach to managing chemical safety.

1. The implementation of new principles with respect to the procurement system for cleaning chemicals

The new procurement system has made it possible to have contracts with a limited number of partners who supply specific cleaning products that are used in everyday cleaning. No other products are used. The main products are as follows:

1. SOL Daily Cleaner, produced by Kiilto Clean specifically for SOL Baltics, is used for mopping and in scrubber dryers, for surfaces and for floors. It is also used on sanitary surfaces.
2. Kiilto Rosita is also used on sanitary surfaces.
3. Since 2016, Ultra H₂O has been used for cleaning glass surfaces and stainless steel surfaces.

If none of those three products will work, the alternative is much more complicated: if another type of cleaning chemical is required, one of the company's cleaning chemicals contractors is invited on-site with a test set of chemicals; these are then tested to find the most effective cleaning agent. This option is taken only in problematic cases.



The three main products have been approved by the management based on criteria relating to safety and health, effectiveness and cost:

- SOL Daily Cleaner is a product labelled with the Nordic Ecolabel and approved by the Finnish Allergy, Skin and Asthma Federation. It is a slightly alkaline product, containing two hazardous chemicals in low concentrations: sodium 2-ethylhexyl sulfate (CAS 126-92-1) and alcohol ethoxylate (CAS 68439-46-3). In daily cleaning, only 1 - 5 ml per 1 l of water is used.
- Kiilto Rosita, which is used for sanitary surfaces, is a slightly acidic product and also contains two hazardous chemicals in small concentrations: ethanol (CAS 64-17-5) and citric acid (CAS 77-92-9). Under the Classification, Labelling and Packaging Directive (EU, 2008), the product is not considered hazardous. In daily cleaning of sanitary areas, only 1...5 ml per 1 l of water is used.
- Ultra H₂O is purified water that has passed through filters and a reverse osmosis system to remove mineral salts and solids such as calcium and chloride. The product is deionised (100 % pure) water. Ultra H₂O absorbs and removes dirt particles similarly to cleaning agents, as it is constantly trying to return to its natural state (i.e. impure) by absorbing whatever materials and elements it comes into contact with. Additionally, it dries leaving no marks or spots, so less physical work (wiping) is required the cleaning worker.

As part of a longer term plan, another type of Ultra H₂O (which also contains disinfectants) is intended to be put to use, eliminating chemical cleaners altogether where possible.

2. Extensive training of cleaning workers: introductory in-service training and on-site training

The company has developed a training system that ensures that workers understand safe work routines and safe handling of chemicals. Introductory in-service training for new employees (regardless of if the new employee has previously worked in the cleaning sector) is conducted in either Estonian or Russian. It is mainly carried out in the training room at SOL Baltics' offices. The training room has been equipped with modern equipment as well as the chemicals used. The guidelines for using chemical agents are



now — as a result of the new procurement system — short and clear, based on the two chemical cleaning products used. New employees receive clear instructions, which are immediately implemented in practice; the training day is 8 hours long and consists of both theoretical and practical sections. First, all the routines for working with SOL Daily Cleaner and Kiilto Rosita are described and demonstrated. Second, all the routines for work with Ultra H₂O are explained and presented. Through the use of Ultra H₂O, exposure to hazardous chemicals is eliminated when cleaning glass and stainless steel surfaces. There is also an emphasis on using the right dosage of the chemicals. This helps to minimise exposure to hazardous substances as well as economising on the use of chemical agents. The easiest way of explaining dosage to the workers is that, when the concentrated cleaning chemical has a colour, the first indicator of the right dosage is the colour of the solution. For example, Kiilto Rosita is a strong pink, so the cleaning solution made using it should be only the faintest shade of pink; a stronger shade shows that too much has been used.

To help workers to remember the right dosage, special containers with pumps or caps with marked dimensions are used. Since SOL Daily Cleaner contains hazardous substances that are irritants, protective gloves are obligatory when using it. The need for personal protective equipment (PPE) is explained during the training day. The training day ends with hands-on activities to ensure that all new employees have acquired the required skills.

After the introductory training day, the supervising manager organises short on-site training sessions to determine that the workers are following the correct routines and remind them of all the information that was delivered during the in-service training.

3. Use of consistently labelled working containers for cleaning agents

Workers are provided with containers that are consistently labelled in accordance with SOL Baltics' requirements. All workers use the same type of containers, which makes the cleaning procedure and information on the products used clear for the workers themselves as well as for the clients. Another benefit is that the storage room looks clean and in order. This creates a good impression of the cleaning company as well as the company where the cleaning services are provided.

4. Use of appropriate PPE where necessary

Workers are offered the type of protective gloves that they find most suitable for themselves: either one-time-use gloves (latex) or multiple-use gloves. Workers' comfort is a priority; for example, if the worker has problems with perspiration, the company recommends wearing additional cotton gloves. The protective gloves are maintained by the company.

5. Preparation of cleaning trolleys

A specific worker is appointed who prepares the cleaning trolleys containing large items of cleaning equipment for the workers. This worker also prepares the cleaning solution containers.

3.4 What was achieved?

A system for effective management of chemical hazards was achieved through a complex approach: elimination of hazardous cleaning agents where possible, use of a limited number of cleaning agents in working procedures where chemical cleaners are necessary, a programme of training for workers, and provision and continuous maintenance of PPE.

3.5 Problems faced

The main problems that were faced during the implementation of the current management of chemical safety in SOL Baltics are the following:

- Older workers with 'outdated' beliefs: older workers may need more convincing that purified water (Ultra H₂O) can be as effective as chemical cleaning agents. It can take a lot of time and different explanations to make them understand that the properties of Ultra H₂O are comparable with those of cleaning agents.
- Some workers were in the habit of bringing cleaning agents from their private residences and using them at work. It had to be explained to them that this is strictly prohibited, as the company is not responsible for health issues that may be caused by cleaning agents that the purchasing managers of the company have not approved and purchased. Management encourages anyone who has any special cleaning problem to turn directly to the supervising manager and not take the initiative to solve the problem themselves with cleaning agents from outside the company.

3.6 Success factors and challenges



workers use chemical agents that are not approved by the company.

Because of the reduction in the number of cleaning agents made available to workers, the guidelines on chemical safety were considerably shortened, and, as a result of this, training for workers is now more straightforward and effective. In addition, workers are able to remember the safety procedures for handling chemicals more easily, as only a few choices are available. Furthermore, the storage rooms for cleaning equipment in working settings are now in better order: fewer containers are used, fewer mistakes are made in labelling the products and fewer

As a result of regular in-service training, as well as on-site training, the workers have developed safe work routines and are able to work safely with chemicals, even when no managers are on site.

The current chemical safety management system in the company has reduced health risks for cleaning workers considerably. Only two main cleaning agents are used that pose a risk of irritation (to the skin/eyes), but clear instructions for workers are given during in-service and on-site training. Where possible, no cleaning agents are used at all for glass and stainless steel surfaces; Ultra H₂O and microfibre wiping cloths have been substituted for the cleaning agents previously used.

3.7 Transferability

It would be possible to transfer the measures to other countries, especially to Scandinavian and Baltic countries where similar cleaning agents and equipment are available. In these countries, cleaning companies could easily implement the practices described in the case study.

3.8 Costs and/or economic impacts

The company has not calculated the costs or economic impact, but it judges that the costs of cleaning agents have decreased and that the costs of training have increased. However, the costs are not considered substantial by the enterprise.

3.9 Evaluation

The case study:

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

3.10 Further information

Contact

Mrs Evely Gorobinski, Head of Human Resources and Quality

SOL Baltics OÜ, Telliskivi tn 61b, 10412, Tallinn, Estonia

Email: evely.gorobinski@sol.ee

About SOL Baltics: www.sol.ee

4 References and resources

EU-OSHA (European Agency for Safety and Health at Work), 2009. *Preventing Harm to Cleaning Workers*. Available at: <https://osha.europa.eu/en/tools-and-publications/publications/reports/TEWE09006ENC/view> (accessed 12 November 2017).

EU (European Union), 2008. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:en:PDF> (accessed 12 November 2017).