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OSH in household chemistry

In 2004 National Labour Inspectorate inspected 159 establishments manufacturing, packaging and storing household chemistry products. The aim of these inspections was to assess how employers fulfilled their obligations concerning elimination and minimization of risks connected with the use of hazardous substances and preparations and to undertake measures necessary to eliminate the identified irregularities.

Amongst those employed – in the overall number of 8,701 persons – almost half was constituted by women.

The technologies of manufacturing household chemistry products (washing powders, softening liquids, dish washing powders and liquids, bleaches, detergents, products removing lime scale, disinfectants) are generally uncomplicated. They consist mainly in blending solid or liquid raw materials followed by packaging of a ready-made product. These operations are often done by hand, e.g. packaging of chemical products for unblocking sewer pipes. The employers' common belief is that these products are harmless. This is also reflected in the fact that self-employed persons are commissioned to package corrosive or irritant substances outside manufacturing establishments. Such was the case in the area covered by activities of District Labour Inspectorate in Bialystok. As a result State Sanitary Inspection was notified of this matter.

On premises of inspected establishments, depending on the profile and volume of production, a few up to several hundred dangerous substances and preparations of various properties were used, e.g. corrosives, irritants or flammables. In a number of establishments nonyl phenol was used in manufacturing of household chemistry products, which is a substance known to cause unfavourable changes in the water environment. In line with currently binding regulations, placing on the market and using products which contain nonyl phenol e.g. in household chemistry products is strictly forbidden. Because this particular legal provision was not yet effective at the time of workplace visits, employers were only informed by inspectors about the date when it came into effect.

In inspected establishments carcinogenic substances were not used. The most often utilized substances had corrosive properties, e.g. ethyl acetate, sodium carbonate. In all inspected establishments there were thrice as many irritant substances as e.g. corrosive substances. However, as far as the volume of used substances is concerned, chemical substances with corrosive properties were definitely in the lead (e.g. sodium hydroxide, potassium hydroxide, alkyl benzoate acid, chloride acid, nitric acid and sulphur acid). The number of utilized hazardous substances and preparations fluctuated between a few tens of kilograms and a few thousand tons a year.

Inspection activities covered the use of various kinds of hazardous chemical substances and preparations which, owing to their properties and the amounts in which they were used, posed a serious hazard to life and health of workers who performed different operation connected with them (for instance filling, pouring, and mixing).

In 46% of inspected establishments labour inspectors found there was not sufficient information to allow for comprehensive identification of chemical substances and preparations used in a given establishment. Employers did not keep an up-to-date inventory of hazardous substances and preparations. In establishments which themselves imported substances and preparations necessary for production purposes, incorrectly labelled

containers e.g. with inscriptions in the language of the country which the chemicals came from, also contributed to the difficulty in identifying used chemicals.

A large scope of irregularities (62%) was identified with regard to informing workers about hazards related to the use of chemicals. At workstations and in technological processes 19% of inspected containers and vessels with hazardous substances and preparations were incorrectly labelled, e.g. the labelling referred to a different substance which was previously kept in a given container; 40 % of inspected pipelines did not bear any warning signs. Warehouses and places of storing chemical substances and preparations were not marked with warning signs or were marked incorrectly (53%). Safety data sheets with essential information about the substances used were missing with regard to 12% of inspected chemicals. Even if employers possessed safety data sheets they failed to use information contained therein to draw up OSH instructions, e.g. information concerning: safe manner of handling a given substance or preparation, the manner of storing hazardous chemicals and preparations, management of related risk, use of personal protective equipment and way of conduct in case of emergency.

Over half of inspected employers (57%) had overlooked very important elements in occupational risk assessment, such as hazards related to physicochemical properties of hazardous substances, amounts and frequency of used substances and the manner of performing work; whereas 35% had not at all documented occupational risk assessment at workstations involved in using and storing chemicals. It should be added that in a number of establishments assessments of occupational risk were conducted by external companies which did not know the peculiarity of assessed workstations. Still, for many employers, especially those employing only a few workers, it is difficult to conduct occupational risk assessment related to storing and using hazardous chemical substances and preparations as they do not have any or have very little knowledge in that area. Occupational risk assessment which is superficial and inadequate to actual working conditions causes that in 31% of establishments preventative actions were undertaken in a non-holistic manner, often without prior analysis of the situation. For instance employers failed to specify the workstations at which personal protective equipment should be used and did not determine its kind. Even if workers were provided with PPE, it was not always correctly selected and used. Activities aimed at reducing or eliminating risks connected with the use of hazardous chemical were undertaken by 60% of inspected employers. These were activities of organizational as well as technical and technological nature; e.g. employers had chosen to resign from using hazardous chemicals which had corrosive properties, particularly dangerous substances had been replaced with less dangerous ones (e.g. highly flammable with flammable, concentrated solutions with dilute solutions, powdery sodium hydroxide with granulated sodium hydroxide; in the process of saponification of fats dangerous sodium hydroxide was replaced with raw soap).

Half of inspected employers did not provide their workers with regular access to OSH instructions. The main irregularity related to OSH instructions concerning the use of hazardous chemicals; to a smaller extent it related to OSH instructions on technological processes and first aid. An astounding 64% of employers had not drawn up the instructions for storing, loading and transportation of hazardous substances and preparations which led to the fact that 70% of employees working in warehouses were not provided with information concerning, among others, limitations to shared storage, maintaining appropriate temperature, humidity, protection from UV radiation – owing to properties of hazardous substances, and storage conditions.
Employers usually comply with the duty to provide preventative medical care for employees engaged in tasks involving contact with hazardous substances and preparations. Out of the total number of 1899 inspected certificates of prophylactic medical checkups only in 2% of cases workers had not undergone periodic medical examination or had not been referred to

medical doctors to have a medical checkup after changing a workstation. However, the reconnaissance conducted by labour inspectors shows that employers sending their workers for examination do not always furnish physicians, who provide prophylactic medical care, with information on harmful to health factors which exist at workstations, hazards related to work with hazardous chemicals, e.g. allergens, irritants, and arduous working conditions including up-to-date results of tests and measurements of factors harmful to health.

The inspection results show that in 28% of establishments there was no up-to-date training and in 17% of establishments training programmes did not cover the issue of hazards present at workstations and the manners in which they can be prevented. This concerned a small group of workers (9% of those employed at hazardous workstations). In the opinion of many labour inspectors training in a large number of establishments is treated as a sheer formality. Workers who had certificates of occupational training did not show the appropriate level of knowledge about risks resulting from properties of hazardous chemicals and preparations and about the manner of handling them.

The identified irregularities are presented in the table below.

Percentage of inspected establishments in which irregularities were identified	
OSH training	**28%**
Prophylactic medical checkups	**20%**
Preventative activities	**31%**
Occupational risk	**57%**
Storage	**64%**
Safety data sheets	**28%**
Information of chemical hazard	**62%**
Identification of chemical hazard	**46%**

In order to eliminate the irregularities inspectors issued 1695 decisions (including 12 decisions on cessation of work and 3 decisions transferring workers to other work activities), 311 recommendations in improvement notices. They also imposed 54 punishment tickets at the total amount of 25,250 PLN and lodged 10 motions for punishment with courts.

The execution of applied legal means made it possible to:

- make employers realize that it is their duty to utilize information contained in safety data sheets of hazardous substances and materials to draw up instructions concerning work with their use and OSH training;
- draw up OSH instructions concerning, in particular, work connected with the use of hazardous chemical substances and preparations, which contain rules of conduct in cases of emergency;
- verify or update inventories of hazardous substances and preparations, obtain updated safety data sheets from producers, mark containers, vessels, pipelines and storing places with warning signs, which contributed to systematizing the information essential both for organizers of work with chemicals and for employees;
- increase the level of safety related to storing hazardous substances and preparations by, among others, eliminating shared storage of hazardous chemicals which it is forbidden to store together, eliminating exposition to UV radiation, correct stacking of pallets with hazardous chemicals, eliminating liquid absorption of flooring, ensuring appropriate ventilation;
- eliminate the hazard caused by the possibility of uncontrolled leakage of hazardous substances while filling large (1000 litre) packages (DPPL) with ABS acid or other corrosive substances;

- equip workers handling hazardous chemicals with personal protective equipment, especially to protect them from getting burnt by corrosive chemical substances;
- determine conditions in which PPE should be used as well as duration of time and situations in which to use personal protective equipment.

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