Hazardous Substances

Case Study No. 7

A workplace using Oven Cleaner

Edition 3 2000

This Case Study has been prepared as one of a series relating to hazardous substance use in the workplace and shows those steps an employer follows to meet obligations of the Workplace Health and Safety Regulation Part 13: Hazardous Substances. It is based on use of an oven cleaning product which contains sodium hydroxide. This Case Study aims to demonstrate how the employer

- Provides correct information to the workplace about the product through the MSDS
- Makes a risk assessment of the risks which currently exist
- Makes and keeps a record of the risk assessment
- Determines the appropriate controls for the continued use of the oven cleaner
- Carries out induction and training of workers using the oven cleaning product

Other Case Studies in this series (1-6, 8) deal with different work situations and different hazardous substances to show how employers make different decisions and take different actions based on the substances encountered and the significance of risk.
Case Study 7

A WORKPLACE USING OVEN CLEANER

Your restaurant uses a brand-name oven cleaner containing sodium hydroxide for heavier cleaning in the kitchen. A kitchen hand spends 20 minutes every three or four days cleaning the oven and stove top in the kitchen with this product. The application time of the cleaner is a few minutes. It is a pressure pack product and all kitchen staff know it must not be used when any gas burners are on.

Your task as the employer is to assess the risk of exposure and if necessary take steps to control it in line with the Workplace Health and Safety Regulation Part 13 - Hazardous Substances.

1. Do the Regulation and Advisory Standard apply?

The regulation or the Advisory Standard for Hazardous Substances will apply if:

- MSDS for the product states the cleaner contains sodium hydroxide (caustic soda) - a hazardous substance;
- MSDS also contains health hazard information eg. highly corrosive to the eyes, moderately corrosive to the skin and corrosive to the upper respiratory tract and lungs;
- label contains a signal word “WARNING” and risk and safety phrases in smaller print;
- supplier indicated that the product contained a hazardous substance;
- you found sodium hydroxide listed in the National Occupational Health and Safety Commission publication "List of Designated Hazardous Substances";
- your hospitality industry association has released a generic assessment for pressure pack oven cleaners because they contain a hazardous substance commonly used at the workplace.

2. How can you ensure compliance with the Regulation on an MSDS?

To comply with the regulation:

- obtain an MSDS from the supplier and place a copy in the register (S 102);

3. What is a register? (S 111)

A register is a document - computer, ledger book etc. - in which you record that the oven cleaner (containing sodium hydroxide) is at your workplace and you put a copy of its MSDS. The register must be accessible to any of your workers who may be exposed to the oven cleaner.

If your workplace is big, you may wish to establish a number of registers related to the work processes.

4. Assessing the risk of workers' exposure (S105)

Risk assessment will identify:

- use of the oven cleaner;
- workers who may, through their work, be likely to get it on their skin or in their eyes, or breathe in any aerosol;
- from the MSDS information about the health effects of the oven cleaner, the level of exposure at which these effects might occur and whether monitoring or health surveillance is recommended;
- the work which may cause exposure of workers;
- whether any of your workers are showing any effects from exposure;
- whether any exposure controls are already in place.

To assess the risks employers should make an assessment of the workplace operating features.

Examine the work procedures in detail. Use your MSDS to help identify the routes of entry of sodium hydroxide.

Examples

- A kitchen hand spraying it onto the oven and other surfaces will have potential skin exposure, some risk of splashing into the eyes and might have exposure to vapours via inhalation.
• Risk to worker scrubbing down sprayed liquid
• The risk to the chef, manager and other restaurant staff is minimal as the kitchen hand is usually the only person in the kitchen during cleaning tasks.

Fig. 1 Kinds of oven cleaners containing sodium hydroxide

From your observations about the possible exposure and controls being used, ask the questions:

Is there a skin and eye hazard?

Q. Do workers wear gloves when any skin contact is possible? Are the gloves the kind recommended by the MSDS, or better? Are there any reports of dermatitis, skin or eye injury among the staff?

A. In this instance, the workers use only short gloves, and no eye protection. Therefore there will be a risk to both skin on the upper arms and the face from drips of the cleaner, as well as to the eyes.

Is there a respiratory hazard?

Q. Are any workers exposed to any vapours or mists? Are adequate exhaust systems provided? Are any other systems in place to collect or exhaust vapours? Are there reports of respiratory symptoms among workers? Is special respiratory protection needed?

A. Workers appear to have no respiratory exposure and use no respiratory protective equipment.

Is air monitoring required? (S108)

Air monitoring will help assess the risks from airborne exposures. Although components in the oven cleaner have exposure standards, there have been no reports of odours, acute or chronic inhalation symptoms. The product is in a foaming pressure pack and application time is only a few minutes. The extraction fans in the kitchen may be operating when the task is done. It appears there is no requirement for air monitoring.

Is health surveillance required? (S 109)

Check first in the “Schedule No 6 - Hazardous Substances of the regulation for which Health Surveillance must be supplied”. Sodium hydroxide is not listed in the Schedule. However, some health advice might still need to be sought if staff have eye irritation or dermatitis. Regular health surveillance is usually required only where there is significant health risk, or when a significant health risk is uncontrolled.

5. Risk assessment record (S 106)

The purpose of the risk assessment record is to:
• provide a record of all details obtained from the workplace risk assessment;
• help you decide whether or not a risk is significant, significant but controlled, or insignificant;
• establish the need for, and extent of controls, monitoring and health surveillance.

In this case study you need to decide the significance of risk posed by the sodium hydroxide.

The following information will help:
• active ingredient, sodium hydroxide, is a corrosive;
• there have been a few newspaper reports where people have been injured using similar pressure packs but there have been no injuries at your workplace and few in “the trade” generally;
• some of the control measures documented in the MSDS are in place at your workplace;
• sodium hydroxide has a national exposure standard listed (2 mg/m³) - other minor components are also listed;
• there are no odours or other early warning signs of effects evident in the workplace;
• no health problems have been reported to you by workers;
• the product is being used for the purpose the manufacturer intended. The MSDS and the label indicate sufficient health and safety information for this intended use; and
• you identified potential exposure to skin and eyes.

Conclusions from the Risk Assessment: making a decision about significance of risk

Advice on making a decision about the significance of risk can be found in the Advisory Standard for
Hazardous Substances (see pages 21 and 22). On the basis of your findings from this risk assessment, you should conclude that the risk could be **significant** to the eyes, face and to the upper arms. Your control goal will be to institute measures to make this a significant but controlled risk, or an insignificant risk.

**EXAMPLE OF A RISK ASSESSMENT RECORD (S 106)**

A risk assessment record should look something like the example. Because the task using the cleaner is judged as a **significant (but controllable) risk**, your record should include certain information.

<table>
<thead>
<tr>
<th>Date of Assessment</th>
<th>20.02.2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>(Brand) oven cleaner - contains sodium hydroxide 5%</td>
</tr>
<tr>
<td>Review Statement</td>
<td>Oven cleaner contains sodium hydroxide approx. 5%; MSDS is in register and workplace; health information on possible irritation or corrosion on eye, skin and respiratory system on both label and MSDS; special note about contact lenses; face and eye exposed to drips of corrosive liquid when scrubbing down; arms also are exposed to drips when wearing existing washing up rubber gloves; only one worker is exposed.</td>
</tr>
<tr>
<td>Degree of Risk</td>
<td>Can be made a significant but controlled risk by application of simple control measures</td>
</tr>
<tr>
<td>Control Measures</td>
<td>The task will continue with this substance, but changing to full arm-length rubber gloves, and preferably overalls. A face shield is to be worn by the workers, including those who normally wear contact lenses. The oven cleaner must not be sprayed onto hot surfaces, only those cool to the touch. The kitchen extraction hood is to be operating when the product is applied.</td>
</tr>
<tr>
<td>Monitoring Required</td>
<td>Airborne monitoring unnecessary</td>
</tr>
<tr>
<td>Health Surveillance Required</td>
<td>Not required</td>
</tr>
</tbody>
</table>

6. Control of exposure (S 107)

Your risk assessment indicates that some controls are required. Your control target will be either to:

- prevent exposure; or
- if prevention is not possible - reduce exposure to as low a level as is practicable.

In your workplace the tasks which you need to control are:

- spraying the foaming cleaner into the ovens; and
- scrubbing and wiping the oven clean.

Your assessment of the task will have judged inhalatory risk as being insignificant and so there is no need for respiratory protection to be worn.

You need to be aware of the preferred methods for preventing or reducing exposure. In particular, the regulation allows the use of personal protective equipment (PPE) only where it is not practicable to control exposure by other means.

In your control decision, consider options such as:

- clean with a mild detergent each night;
- use of alternate product such as cloudy ammonia or a natural non-corrosive product.

In this case study the requirements of total exposure prevention cannot practicably be met. Oven cleaners containing sodium (or potassium) hydroxide are the
most effective for stubborn residues. All cleaning tasks are manual operations. Using the product is unavoidable so PPE is the only option.

Your control solutions are:

- leave the extraction hood on while spraying the cleaner into the oven;
- ensure necessary PPE (arm-length rubber gloves, face shield and cotton overalls) are supplied and used for both spraying and scrubbing the oven.

Your assessment of the task will have judged the risk of inhalation part of the exposure as insignificant and so respiratory protection is not required.

The Regulation does not specify how often control systems need to be checked, only that they need to be effectively maintained. Any tears and holes in gloves are usually self-evident, but ensure adequate supply. A face shield requires little maintenance other than periodic cleaning.

7. Keeping records (S 112)

Because the risk assessment identified a significant but controllable risk you need to keep certain records. Any review assessments also need to be kept on record. The information needs to be kept for 30 years if significant or 5 years if the risk was insignificant.

8. Induction and training (S 113)

As an employer, you are required to provide induction and training, relevant to the risk, to all workers exposed to the oven cleaner. Your staff should be advised on:

- health effects of sodium hydroxide;
- the need to wear gloves and overalls and the use of face and eye protection;
- how to work with the PPE provided.

Again, a record must be kept of the details of this induction and training.
### 9. Managing sodium hydroxide in your workplace: the steps

**CHECK MSDS TO SEE WHETHER SODIUM HYDROXIDE IS A HAZARDOUS SUBSTANCE**

- check product label and MSDS register

**PLACE MSDS IN REGISTER IF NOT ALREADY THERE**

- place copy of MSDS into workplace also

**CONDUCT A RISK ASSESSMENT**

- review MSDS
- observe workplace procedures and check whether there is any skin or eye contact, vapour, injury/illness report

**MAKE A RISK ASSESSMENT RECORD**

- record oven cleaner use
- review health effects
- note controls in place and controls as required eg in MSDS

**DECIDE WHETHER RISK IS SIGNIFICANT**

- Implement controls
  - as determined by risk assessment

**KEEP RECORDS OF RISK ASSESSMENT AND CONTROLS**

**UNDERTAKE HAZARDOUS SUBSTANCES INDUCTION AND TRAINING**