

To Assess the Chemical Risks in your Workplace – an example of how to proceed



You make a risk assessment to answer the question:

Which measures do we need to take to protect us from illness or accidents?

All kinds of risks must be assessed but sometimes it can be a good idea to concentrate on certain risks. This text describes how you can proceed to comply with the legislation on chemical risks at work. But it is important to keep all kinds of risks in mind, so that new risks are not introduced via the preventive measures.

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THE EXAMPLE

In our example we have a metal industry that manufactures and paints metal articles. The enterprise has a sheet-metal workshop, a painter's workshop, a store for finished products and an office.

To start the process of risk assessment

The manager decided that the chemical risks were to be addressed. By doing this separately they could more closely learn how chemicals can be hazardous and about the legislation.

The production manager was appointed to lead the work of assessing the chemical risks in the whole enterprise. He was also given the authority to engage expert assistance if necessary. The purchaser, who was subordinated to the production manager and usually handles chemical and environmental matters, was given the task of coordinating the work at the different divisions and of advising their representatives.

The different divisions of the enterprise: the sheet-metal workshop, the painter's workshop, the store and the office, all had one foreman and one safety delegate representing the workers.

The foremen and the safety delegates were invited by the production manager to a meeting where they were informed of the background and about how tasks had been allocated. The purchaser then went through the plan for the process.

In order that everyone should know what to pay attention to, the purchaser went through a pamphlet from the Work Environment Authority on chemical hazards and the obligations associated. He had also received informative material from the Chemical Inspectorate on the labelling of purchased chemical products. Other provisions from the Work Environment Authority relevant in the context were also discussed, e.g. the provisions on spray painting and on lead batteries.



First safety inspection tours

The divisions were first to make safety inspection tours. Together with the worker doing each task, the foreman and the safety delegate were to identify which situations or activities could lead to exposure to chemicals or other chemical risks such as fire.

They were to present a list to the production manager of the identified situations and activities by the first of February. On the list they were also to note the preventive measures they believed were necessary or if they were of the opinion that a more detailed risk assessment was needed. They were also to present how they had divided up their activities and where the risks had been found.

Divide up to get an overview

Each division choose their own way to divide up the activities. Each part should be manageable and it should be easy to check that all activities and areas had been taken care of.

They chose to divide by:

- trade, e.g. welder,
- task, e.g. grinding, or
- rooms, e.g. copying room.

In the painter’s workshop they divided by task into preparation of the articles, preparation of the painting equipment, spray painting, drying and maintenance of equipment and premises. The storage of chemicals was assessed room by room.

In the sheet-metal workshop there were welders, sheet-metal workers and a foreman. A risk assessment was done for each of these trades.

The store for finished products and the office made their assessment room by room.

Identify risks and make general assessments

In the painter’s workshop it was observed that exposure to paints and solvents could occur in all parts of the work, both through inhalation and skin contact. Some paints and solvents were also flammable, so the risk of fire or explosion had to be considered.

In the sheet-metal workshop they established that the welders were exposed to welding fumes and that the use of welding gases could lead to accidents. The sheet-metal workers used some spray cans. They did not know if this was unhealthy. The foreman sometimes tested new methods of working. It was stated that it was impossible to predict the risks in advance and therefore assessing the risks had to be a part of that task.

In the sheet-metal workshop the risks were noted at the safety inspection tour in a table

Activity/Situation	Risk	Assessment/Measures
Welders		
Welding	Exposure to fumes	Investigation necessary
If a gas starts to leak	Risk of explosion	Investigation necessary
Sheet-metal workers		
Spraying of sheets	Unsure whether dangerous	Investigation necessary
Foreman		
Tests before new jobs	Unable to assess in advance	Risk assessment is part of the task

In the store for finished products they concluded that the finished articles did not entail any chemical risks. Since they only used electric trucks no exhaust fumes were formed. Because of the risk of accidents they wanted to look over the place for the

charging of batteries. For cleaning the store no chemical products labelled dangerous to health were used and the methods were such that they did not come into prolonged contact with the cleaning agents.

In the office the use of chemical products was considered to be so little that it was of no importance from a safety point of view. Water was heated up for coffee and tea only at points well arranged for this and it was concluded that there was no need for changes.

Assess in more detail and suggest prevention

The foremen and the safety delegates discussed their lists together with the production manager and the purchaser. The production manager then ordered them to proceed with some of their points. The purchaser made a form for the more detailed assessments.

The image shows a yellow form titled 'RISK ASSESSMENT FORM'. It contains several sections with headings and checkboxes, including 'GENERAL INFORMATION', 'IDENTIFICATION OF THE TASK', 'IDENTIFICATION OF THE HAZARDOUS AGENTS', 'ASSESSMENT OF THE RISKS', 'PREVENTION MEASURES', and 'CONCLUSION'. The form is designed for detailed documentation of risk assessments.

The form, prepared at the workplace, for documentation of their risk assessments.

(See next page)

The painter's workshop: A detailed assessment was made for each task by filling in the form. Knowledge of the dangerous properties of the chemical products was obtained from the safety data sheets. If, for a product labelled as dangerous to health or flammable, a safety data sheet was missing the supplier was contacted.

Situations when vapours could be breathed in or when chemicals could come into contact with the skin were identified. They also discussed which dangerous situations could arise if something did not function as planned.

The assessment resulted in a suggestion to move the mixing of paints to a better-ventilated place. In the handling and safety instructions it was added that gloves should be used during certain operations. They also needed routines for control of the ventilation equipment. The plan for how to deal with accidents and incidents, such as fire and power failure, needed revising and a safety drill was needed.

The sheet-metal workshop assessed the handling of gases for welding. They found that checking and maintenance of the equipment should be systematic, to ensure that no leaks would occur.

The use of the sprays was considered acceptable due to the local exhaust ventilation. At welding, however, they had observed that all fumes were not sucked out by the ventilation system. Therefore they wanted an investigation of the exposure to welding fumes by the safety engineer at the occupational health services.

At the store for finished products they examined the charging of batteries with regard to the risk of hydrogen gas explosion and acid splashing. The compliance with the provisions for lead batteries was checked. Resulting from this they concluded that new

safety goggles should be obtained for the place of charging and that they needed to inform all persons concerned of the risks.

The office:

In the office risks were considered small and no protective measures necessary. The documentation from the safety inspection tour with general assessments was approved, dated, signed and filed by the production manger.

Risk assessment of: _____

Division:

Definition

What does the assessment include? Describe in detail:

The basis for the assessment (safety data sheets, provisions and experiences from the workplace)

Which chemical products /substances are used?

Which substances /air contaminants are formed?

Health hazards on inhalation of the products /substances:

Occupational exposure limit values:

Health hazards on skin contact:

Health hazards on ingestion:

Flammability?

Other special risks:

Have any illness, accidents or incidents been reported?

Is there any special legislation applicable?

Assessment of risks in the actual handling

Where and when are vapours or dust formed?

Exposure compared to the limit values (Is a measurement necessary?):

Where and when can you come into contact with the chemical?

Can this harm the skin?

Which unplanned events could lead to chemical substances giving rise to serious consequences, such as fire, chemical burns or loss of consciousness?

Can we take further actions to avoid such dangerous occurrences?

Is it possible to reduce the damage in the event of something happening?

Proposed actions (May concern: working method, equipment, place, organisation, protective measures, maintenance routines, instructions, emergency measures or information)

The division proposes the following actions:

Expert advice is necessary for the following risks:

Persons participating in the assessment:

Decisions by the management representative:

Responsible person for each action:

Measures shall be taken by, date:

Date of decision:

Signature by the manager representative

Decisions and documentation

The production manager considered the proposals and accepted all of them. He appointed people to be responsible for each action. These people took the contacts appropriate and requested estimates of cost, if the cost was substantial, before ordering.

The production manager completed the documentation from the divisions with the decisions about actions, responsible persons and date for follow-up (action plan). He dated and signed the plan.

Follow-up of the result

The production manager decided on routines for follow-up. The purchaser was to check that all actions were carried out by November and in cooperation with the division judge whether the measures had fulfilled the purpose.

Suggestions for further reading:



Systematic work environment management - guidelines

[[PDF-file, 7,7 MB](#)]



Chemicals control in the workplace – limiting chemical hazards at work

[[PDF-file, 187 kB](#)]

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