

## What is a risk assessment?

Risk assessment is the process where you:

- identify hazards,
- analyze or evaluate the risk associated with that hazard, and
- determine appropriate ways to eliminate or control the hazard.

In practical terms, a risk assessment is a thorough look at your workplace to identify those things, situations, processes, etc that may cause harm, particularly to people. After identification is made, you evaluate how likely and severe the risk is, and then decide what measures should be in place to effectively prevent or control the harm from happening.

## How do you do a risk assessment?

Assessments should be done by a competent team of individuals who have a good working knowledge of the workplace. Staff should be involved always include supervisors and workers who work with the process under review as they are the most familiar with the operation.

In general, to do an assessment, you should:

- identify hazards,
- evaluate the likelihood of an injury or illness occurring, and its severity,
- consider normal operational situations as well as non-standard events such as shutdowns, power outages, emergencies, etc.,
- review all available health and safety information about the hazard such as MSDSs, manufacturers literature, information from reputable organizations, results of testing, etc.,
- identify actions necessary to eliminate or control the risk,
- monitor and evaluate to confirm the risk is controlled,
- keep any documentation or records that may be necessary. Documentation may include detailing the process used to assess the risk, outlining any evaluations, or detailing how conclusions were made.

When doing an assessment, you must take into account:

- the methods and procedures used in the processing, use, handling or storage of the substance, etc.,
- the actual and the potential exposure of workers,
- the measures and procedures necessary to control such exposure by means of engineering controls, work practices, and hygiene practices and facilities.

By determining the level of risk associated with the hazard, the employer and the joint health and safety committee can decide whether a control program is required. It is important to remember that the assessment must take into account not only the current state of the workplace but any potential situations as well.

## How are the hazards identified?

Overall, the goal is to find and record possible hazards that may be present in your workplace. As mentioned, it may help to work as a team and include both people familiar with the work area, as well as people who are not - this way you have both the "experienced" and "fresh" eye to conduct the inspection.

To be sure that all hazards are found:

- look at all aspects of the work,
- include non-routine activities such as maintenance, repair, or cleaning,
- look at accident / incident / near-miss records,
- include people who work "off site" either at home, on other job sites, drivers, teleworkers, with clients, etc.,
- look at the way the work is organized or "done" (include experience and age of people doing the work, systems being used, etc),
- look at foreseeable unusual conditions (for example: possible impact on hazard control procedures that may be unavailable in an emergency situation, power outage, etc.),
- examine risks to visitors or the public,
- include an assessment of groups that may have a different level of risk such as young or inexperienced workers, persons with disabilities, or new or expectant mothers.

It may help to create a chart or table such as the following:

## How do you rank risks?

Ranking or prioritizing hazards is one way to help determine which hazard is the most serious and thus which hazard to control first. Priority is usually established by taking into account the employee exposure and the potential for accident, injury or illness. By assigning a priority to the hazards, you are creating a ranking or an action list. The following factors play an important role:

- percentage of workforce exposed,
- frequency of exposure,
- degree of harm likely to result from the exposure,
- probability of occurrence.

There is no one simple or single way to determine the level of risk. Ranking hazards requires the knowledge of the workplace activities, urgency of situations, and most importantly, objective judgment. One way used is as in the following two tables:

		Probability			
		Extremely Remote	Remote	Likely	Most likely
Severity		1	2	3	4
Negligible	1	1	2	3	4
Minor	2	2	4	6	8
Serious	3	3	6	9	12
Fatality	4	4	8	12	16

*Severity – How serious the result of the incident might be in terms of injury or loss*

*Probability – How likely the hazard will result in incident*

*Risk – Severity x Probability*

### What options exist to prioritize risks?

Risk Definitions	Risk is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss.
Low	Activities in this category contain minimal risk and are unlikely to occur. Organizations can proceed with these activities as planned.
Medium	Activities in this category contain minor to serious risks that are remotely likely to likely to occur. Application of proactive risk management strategies to reduce the risk is advised. Organizations should consider ways to modify or eliminate unacceptable risks.
High	Activities in this category contain unacceptable levels of risk, including catastrophic and critical injuries that are highly likely to occur. Organizations should consider whether they should eliminate or modify activities that still have a “high” rating after applying all reasonable risk management strategies.

## What are the main ways to control a hazard?

The main ways to control a hazard include:

- **Elimination (including substitution):** remove the hazard from the workplace.
- **Engineering Controls:** includes designs or modifications to plants, equipment, ventilation systems, and processes that reduce the source of exposure.
- **Administrative Controls:** controls that alter the way the work is done, including timing of work, policies and other rules, and **work practices** such as standards and operating procedures (including training, housekeeping, and equipment maintenance, and personal hygiene practices).
- **Personal Protective Equipment:** equipment worn by individuals to reduce exposure such as contact with chemicals or exposure to noise.

These methods are also known as the "hierarchy of control" because they should be considered in the order presented (it is always best to try to eliminate the hazard first, etc).

## Where are controls used?

Controls are usually placed:

1. At the source (where the hazard "comes from")
2. Along the path (where the hazard "travels")
3. At the worker

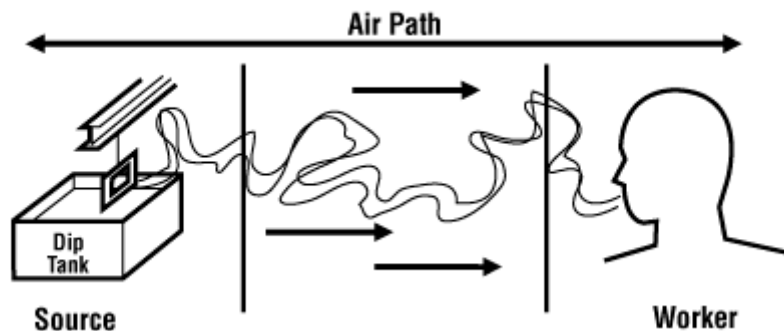


Figure 2

Control at the source and control along the path are sometimes also known as engineering controls.

Administrative controls limit workers' exposures by implementing other "rules", such as training, supervision, shorter shifts in high risk areas etc. These control measures have many limitations because the hazard itself is not actually removed or reduced.

Administrative controls are not generally favoured because they can be difficult to implement, maintain and are not a reliable way to reduce exposure

Personal protective equipment (PPE) includes items such as respirators, protective clothing such as gloves, face shields, eye protection, and footwear that serve to provide a barrier between the wearer and the chemical or material.

It is the final item on the list for a very good reason. Personal protective equipment should never be the only method used to reduce exposure except under very specific circumstances because PPE may "fail" (stop protecting the worker) with little or no warning. For example: "breakthrough" can occur with gloves, clothing, and respirator cartridges.