

Take 7 Steps to ID Safer Workplace Chemicals



One of the most common safety hazards in many workplaces is exposure to dangerous chemicals and substances, which can cause cancer and other serious diseases. There are safety measures you can implement to protect workers from such hazardous substances, such as [ventilation systems](#) to prevent inhalation of these chemicals and use of proper [PPE](#).

But the best way to protect workers from hazardous substances is to eliminate them from the workplace completely by replacing them with safer alternatives.

To that end, the [Occupational Safety and Health Administration](#) (OSHA) in the US has published a toolkit that can walk you through the process of evaluating your current chemical use, considering alternatives, implementing substitutes and monitoring the results.

Although [Transitioning to Safer Chemicals: A Toolkit for Employers and Workers](#) was written from a US perspective, it's still a useful and applicable resource for Canadian employers. (For a purely Canadian approach, Ontario's Ministry of the Environment released a similar guide on [how to identify 'green' chemical alternatives](#), focusing on substitutes that are safer for both the environment and workers.)

TAKE 7 STEPS

The OSHA toolkit spells out a seven step process:

1. Form a team to develop a plan. Assemble an internal team to take responsibility for developing the plan for transitioning to safer chemicals. The team may include JHSC members, workers, managers and union representatives. It's important to involve workers who perform various functions in the workplace, such as engineers, maintenance workers and research and development staff. Also, identify any external stakeholders who should be included in the planning process.

2. Examine current chemical use. To identify targets for substitution, you need to know how you currently use chemicals in your workplace and the hazards associated with each of these chemicals.

3. Identify alternatives. After targeting a chemical as a possibility for substitution, broadly consider *all* possible chemical alternatives, material alternatives, process changes, design changes, technological solutions or other options to eliminate this chemical. Don't discount any alternatives at this stage—even if some options may not currently be feasible.

4. Assess and compare alternatives. Next, compare the hazard, cost and performance of different alternatives to make an informed decision about which you may be able to use. The team should consider what the chemical needs to do and whether there are specific technical and engineering design constraints. Other functional requirements, such as quality criteria and customer or legal requirements, should also be considered.

5. Select a safer alternative. To select alternatives, consider the advantages and disadvantages of each option with regards to hazard, performance and cost, and identify any trade-offs that exist. The selection of a preferred alternative should be directly linked to the goals of your company and project. You should also determine whether there are other impacts of the alternatives, including, but not limited to, energy use, water use, environmental impacts,

hazardous waste impact, and upstream or downstream hazards to workers.

6. Test the selected alternative. Before shifting completely to a safer alternative, test it on a smaller scale. The extent of the testing will depend on the complexity of the change. To get the best results, involve the workers who'll be impacted by the change. Ensure that they're trained and feel comfortable working with the alternative chemical before the testing begins.

7. Implement and evaluate the alternative. If the test is successful, plan the complete implementation of the alternative. The team should:

- Document the implementation plan
- Decide who should be involved in implementation
- Communicate the plan to workers
- Develop and perform the necessary training.

You also need to monitor and evaluate the full implementation of the alternative to ensure that it meets your expectations, including tracking the actual impacts on worker health and safety; performance and efficiency of the tasks or processes affected; sales; and services.