

## Chemicals and Materials

### Cleaning Products – Working Safely

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### What are cleaning products?

Cleaning products are those designed to remove dirt by wiping, scrubbing, or mopping. Many workplaces use so-called household or consumer-labelled cleaning products to clean.

Other common products include

- Sanitizers – which contain chemicals that reduce microorganisms such as bacteria, viruses, and moulds from surfaces.
- Disinfectants – which contain chemicals that can destroy or inactivate microorganisms.

Cleaners, sanitizers, and disinfectants have different purposes. Generally speaking, sanitizers and disinfectants are more hazardous than cleaners. Always use the appropriate product for the task, and one that is the least hazardous.

Please see the OSH Answers [Sanitation and Infection Control for Cleaning Staff](#) for more information.

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### Can cleaning products cause health effects?

Yes. Common health effects include skin dermatitis, allergies, or triggering asthma. Some products are corrosive and can cause burns to the skin or eyes. Many factors can influence the level of risk.

These factors include:

- The individual ingredients of the product
- How the product is used or stored
- The ventilation in the area when it is being used
- If the product can be splashed or spilled
- If the product comes into contact with the skin or eyes
- If mists, vapours, or gases can be released

Please see the OSH Answers [What Makes Chemicals Poisonous](#) for more information.

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## Are "green" or "environmentally friendly" cleaners safer to use?

It's hard to say. Always review the product you are using to understand its health and safety hazards.

For example, individuals can have health effects from any ingredient, including "natural" ingredients, so one product might be of little or no risk to one person and harmful to another.

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## How can I find out more information about the safety of a product?

Read the label to determine its ingredients and any specific use or handling instructions. The label may also have a hazard symbol on the front of the product. [Consumer product](#) (or [Workplace Hazardous Materials Information System \(WHMIS\)](#)) symbols and labels are used to help notify users of the hazards.

You can contact the product manufacturer or visit their website to learn more about the ingredients and their hazards and request a [safety data sheet](#).

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## Should cleaning products be mixed?

No. Never mix different cleaning products together.

Products containing bleach and ammonia must never be mixed. Hazardous gases may be released. Many disinfectants include [bleach](#). [Ammonia](#) is a common ingredient in window cleaners, bathroom cleaners, glass cleaners, and furniture polish.

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Do not mix vinegar (which is an acid), bleach, or ammonia when making homemade cleaners.

Another example is drain-cleaning products. Some products contain acids, such as sulphuric acid and hydrochloric acid, while others contain bases, such as sodium hydroxide or potassium hydroxide. Mixing drain cleaners can cause an explosive reaction and create hazardous gases, such as hydrogen sulphide (H<sub>2</sub>S) and chlorine gas.

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## What should be done when using any cleaning product?

Always:

- Know the hazards of that product before you use it.
- Read the information on the label or safety data sheet.
- Follow the instructions or follow your training when using and storing the product.
- Ask for help if you cannot read the label, the label is in poor shape (i.e., not readable), or do not know how to work safely with the product.
- Know how to safely dilute a product when needed.
- Work in a well-ventilated space. Take fresh air breaks as needed.
- Know what to do if there is a spill or emergency.
- Wear any needed protective equipment, such as gloves and goggles.
- Store products in their original containers according to the manufacturer's instructions.
- Store products such as paints, solvents, gasoline, fuels, varnishes, and other products that may release fumes outside of the home or workplace, where possible.
- Check containers for leaks or damage.
- Keep away from children and pets.
- Call a poison centre or your health care provider if you are concerned that you or another person has been harmed. Have the container or label available to tell the health care provider what products were used.

Other steps include:

- Use mats near entrances to reduce the level of dirt from being carried into the building.
- Use high-filtration, high-efficiency particulate air (HEPA) vacuums.
- Use cleaning scrubbers or mops that do not require hands to come into contact with the cleaning solution.

- Do not wash your hands with the cleaning product. Wash hands with water after working with a cleaner, and always wash before eating, drinking, or smoking.
- Do not reuse empty containers.
- Do not pour unused products down the drain unless the manufacturer allows it. Follow your municipal guidelines when disposing of chemicals and other hazardous wastes.

Be aware that when cleaning, other health and safety issues may need to be addressed, such as:

- [Slips, trips, and falls](#)
- [Ergonomics](#) (such as bending, twisting, lifting)
- [Moulds](#)
- Bloodborne pathogens (such as from [needlestick injuries](#))

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## What steps should be taken when diluting a cleaning product?

**IMPORTANT:** First, determine that the concentrated product does not react with water (e.g., gases will not be released). When diluting a concentrated product with water, whether it is a consumer or industrial product, **always add the concentrate to the water. Follow the manufacturer's instructions.**

Wear safety glasses or goggles and gloves as needed. Depending on the concentrated product's hazards (e.g., acid or base), a chemical apron, laboratory coat or other protective clothing may be needed.

Use containers, measuring devices, funnels, and stirring sticks (or similar) made of a material that will not react with the chemical.

Prepare the diluted solution near a water source or an eyewash station in case the chemical splashes on the eyes or skin and you need to wash it off quickly. The label should have instructions on what to do in case you come into contact with the chemical. Follow the instructions on the label.

Add most of the water into the container that you will use for the dilute solution. For example, if you need to prepare one litre of a 10% solution of the concentrated product, the first step is to add about 800 ml of water to the spray bottle to hold the diluted solution.

Label the container to indicate it contains a diluted solution.

Measure the amount of the concentrated product in a compatible measuring device. For example, if you need to prepare one litre of a 10% concentrate solution, measure 100 ml of the concentrated product in the measuring device.

If the concentrated chemical container spills, drips, or dribbles, use a funnel or scoop to transfer the chemical.

Depending on the type of receiving container (e.g., narrow neck vs wide opening) add the concentrate to the water as follows:

- Narrow neck container (e.g., spray bottle) – Use a funnel to transfer the concentrate in several portions. Gently stir the solution with a compatible stirring stick. Do not let the chemical drip on the floor or bench. Place the funnel in a container designated for temporary storage of the funnel if you will not be cleaning it immediately. For example, for a one-litre 10% solution, add 100 mL of the concentrate in four equal portions (i.e., 4X25 mL) slowly through a funnel. After each addition of a 25 mL portion, place the funnel in a container designated for its temporary storage. Gently stir the diluted solution.
- Wide-neck container—Slowly add the concentrate while stirring the solution in the wide-neck container. Depending on the opening size, you may need a funnel to safely add the concentrate to the water. If you use a funnel, follow the above steps for a narrow-neck container.

Slowly top up with additional water to reach the final volume. Gently stir the contents in the container.

Clean up. Close the container containing the concentrated chemical and store it according to the manufacturer's instructions. Wash the mixing devices and funnels after use. Clean any spills. Dispose of waste liquid safely.

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