

# TAKE THE CHALLENGE AND START THE 3R's

**Reduce, Reuse, Recycle.**

**Promoting zero-waste lifestyle among adults.**

This document was developed by Partners of 3R's project, 2021

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# **CLEANING PRODUCTS**



## INTRODUCTION – CLEANING PRODUCTS

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Manufacturers of cleaning products have accustomed us that in order to do laundry or cleaning, it is enough to buy a ready-made detergent suitable for this purpose, but such products have not always been available. Detergents for washing or cleaning various surfaces can be equally made by yourself and it is not at all as difficult as it seems. People who decide to take this step are often surprised how little is needed to make washing powder or milk for cleaning the bathroom and how good the effects of a product prepared from such basic, natural ingredients as:

Source: <http://ekologiczni.com.pl/wplyw-detergentow-na-zdrowie-i-srodowisko/>

- baking soda or soda ash,
- spirit vinegar,
- tea tree oil,
- hydrogen peroxide,
- salicylic spirit,
- borax,
- marseille soap,
- lemon juice.

Ecological cleaning products are the best way to get rid of chemical preparations which may have a negative impact on our health. If we want to take care of cleanliness at home in a natural way, we can choose from two types of products. Home cleaning products based on the above mentioned ingredients or ecological cleaning products from the store.

Organic cleaning products can be divided into two types:

- Homemade liquids, cleaning sprays, pastes and powders that we prepare ourselves using products such as baking soda, citric acid, vinegar, borax and essential oils,
- Ready-made, organic cleaning products bought in the store.

Which of these remedies we opt for, should depend on our individual preferences. Of course, the most natural option will be homemade cleaning products. Their preparation and use will also be the most ecological and economical choice. Products of this type do not contain preservatives, are safe for health and the environment. If we are to talk about natural cleaning products without chemicals, it will be precisely the home detergents, which we will prepare ourselves. Ecological cleaning products, in turn, will be a better choice for people who do not have the time or desire to make homemade detergents, do not feel convinced about them and like to use ready-made solutions.

The cleaning products we all know from the shops may contain many harmful substances in their composition. These include:

- triclosan,
- reactive chlorine compounds,
- ammonia,
- phosphates,
- formaldehyde,
- MEA, DEA, TEA (foaming agents),
- sodium lauryl sulphate,
- strong preservatives,
- phenols,
- synthetic fragrances,
- optical brighteners.

And although these are substances approved for use in cleaning products, some of them may have adverse effects on our health. It is often the preparations we use for cleaning that cause our health problems. Weaker immunity, skin allergies, upper respiratory tract infections, irritated mucous membranes may be the result of toxic effects of the detergents we use. Additionally, chemical detergents harm the environment. Therefore, if we have a choice it is worth replacing popular detergents with ecological cleaning products. One of the most important advantages of ecological cleaning products is that we know their composition. Most manufacturers of well-

known brands of eco-detergents inform us on the label what substances are contained in their liquids, powders and other cleaning products. Unfortunately, this type of information is still missing on conventional cleaning products.

**Advantages of eco-friendly cleaning products:**

- composition based on safe ingredients,
- contain no enzymes, formaldehyde, optical brighteners, phosphates, petrochemicals, toxic fragrances, strong preservatives, synthetic fragrances, triclosan, irritating foaming agents,
- are biodegradable and environmentally friendly,
- do not contain raw materials from dead animals,
- have pleasant, natural scents,
- are gentle on the skin,
- do not cause such discomforts as tearing from the eyes, pinching in the throat, shortness of breath,
- are safe for health and allergy sufferers,
- Often their packaging is glass or paper and meets the requirements of the zero waste concept.

Being a conscious consumer, we should choose what is best for us and our health. Therefore, **natural and ecological cosmetics, healthy, unprocessed food and ecological cleaning products** should be the basic products we reach for when shopping and use every day.

Ecological cleaning products are becoming more and more popular and, consequently, more accessible. Currently, you can buy them even in chain drugstores, and many producers of conventional detergents decide to introduce eco-products to their offer. All this is good for us, consumers, because we have a better choice, lower prices and ecological products available at our fingertips.



## HEALTH AND ENVIRONMENTAL IMPACTS OF DETERGENTS

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Detergents - we use them every day. But do we think about the impact of detergents on health and the environment? And it turns out that this issue should not be underestimated and we should think whether the chemicals we use so far could be replaced by more ecological products. What are detergents? These are chemical compounds which are an active element of various types of washing and cleaning products. Such compounds are contained e.g. in washing powders, liquids for washing various surfaces, products for cleaning and disinfecting sanitary facilities, etc. The most important task of detergents is cleaning, but also whitening, shining or antistatic action. Some of the most dangerous ingredients of cleaning products are e.g. phosphates, triclosan, chlorine chemicals or some of the fragrances. Harmful substances can enter the human body through contact with the skin, eyes or respiratory tract. It concerns especially strong caustic preparations for cleaning sanitary facilities, but also other washing liquids and aerosols. Common symptoms of harmful effects of detergents are coughing, sneezing, skin allergies and headaches. These symptoms may disappear after discontinuing use of the product. However, toxic substances with prolonged exposure can cause, among others, cancer, hormonal disorders and problems with fertility. According to a study by scientists at the University of Bergen, very frequent use of chemical cleaning products can be as harmful as smoking 20 cigarettes a day!

What is the risk of inhaling cleaning products?

- **Respiratory, skin and eye irritation.** Irritation of the respiratory tract, skin and eyes can occur both from exposure to individual chemicals and from the interaction of several preparations. Combining preparations containing chlorine and ammonia leads to the production of highly irritating fumes, which cause nausea, coughing and eye problems. Mixing chlorine with acids can also result in skin or eye irritation.

- **Decrease in lung function.** A study conducted by Professor Øistein Svanes of the University of Bergen found that professional cleaners had a 17% lower lung capacity than those in other trades. That's not all, as a 14% reduction in lung capacity was also observed in study participants who do not clean professionally but perform routine household cleaning with chemical cleaning products.
- **Cancer.** Some of the chemicals present in household chemicals are proven carcinogens. The best example is formaldehyde, which is found, among others, in air fresheners and preparations to fight mould. Fragrance additives derived from petrochemicals are also a serious threat.

Source: <http://ekologiczni.com.pl/wplyw-detergentow-na-zdrowie-i-srodowisko/>

## **THE ENVIRONMENTAL IMPACT OF DETERGENTS**

Detergents can also have a harmful effect on the environment. First of all, it is worth mentioning a rather obvious issue - the plastic packaging of detergents. When choosing detergents, pay attention to whether the bottles are made of the least harmful materials and whether they can be recycled. The second issue is the pollution of the environment with toxic substances. Phosphates added to products are particularly troublesome. Why? Because through sewage they get into waters and cause their eutrophication ("blooming" of water). That is why it is worth choosing environmentally friendly products that allow for equally effective cleaning,

Unclean cleaning products seep into waterways, which deteriorate the quality of soils and forests and kill fish that swim in them. Almost every home has at least one chemical cleaning product, whether it is for cleaning the bathroom, polishing the mirrors or cleaning the kitchen. Less environmentally friendly cleaning products are an integral part of everyday life. We use them to clean dishes, do the laundry or simply use them for bathing, unknowingly transferring a lot of negative substances to the environment, thus endangering our health and the health of our relatives. Bearing in mind the circular movement of water in nature - by polluting one container of our home water, we pollute the entire environment.



## **THE EFFECTS OF CHEMICAL ABUSE:**

- **Eutrophication of waters** - explained as increase of water fertility, as a result of high concentration of phosphorus and nitrogen, which enters the water bodies. Although the initial stage of this process may seem beneficial for the environment, exceeding a certain limit disturbs the biological balance, leading to intensive water bloom, strong algal and plankton growth and decline of many aquatic species. Phytoplankton covering the entire water surface takes up a significant amount of oxygen and prevents light from penetrating deep into the water, thus stopping plant growth and animal life.
- **Soil degradation** is a problem caused mainly by air pollution, acid rain carried by atmospheric fronts and the use of artificial fertilisers. Soil fertilization alone may therefore be insufficient. It is important to use environmentally friendly cleaning agents that do not affect the composition of the water that is released into circulation.
- **Increasing amount of plastic waste** - natural cleaning products, apart from having an eco-friendly content, are in most cases biodegradable packaging that decomposes quickly. Most bio-packaging can also be recycled and reused, thus reducing the amount of waste being thrown away.

The toxicity of cleaning products is harming the entire world, and the most dangerous ingredients include:

- **Benzenes, phthalates, formaldehydes** - which have strong carcinogenic effects and increase the likelihood of liver disease. These ingredients are most often found in air fresheners. **Artificial fragrances** - which in most cases are petroleum derivatives and cause severe allergies.
- **Chlorine compounds** - most harmful to the respiratory system.
- **Sodium hydroxide** - which in large quantities can cause burns and wounds.
- **Optical brighteners** - the most common among washing powders and other laundry detergents. They are highly toxic and irritate the skin.

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- **Softeners** - found mainly in fabric softeners. They contain benzyl acetate and pentane, which are considered some of the most dangerous household chemicals.

## HOW TO MAKE CHANGES ON A PERSONAL LEVEL

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Have you ever wondered about the harmfulness of such cleaning products as floor cleaner or ordinary liquid soap? Research shows that popular chemicals are harmful not only to us, but also to the environment, and the number of allergies they cause continues to grow. Every mother who has ever seen a worrying rash on her child's face knows about the consequences of using untested washing powders. Such products harm us and are one of the causes of environmental degradation, water and soil pollution.

Source: <http://ekologiczni.com.pl/wplyw-detergentow-na-zdrowie-i-srodowisko/>

How to counteract it? Are there eco-friendly cleaning products that are safe for all of us? Fortunately, the answer to this question is "Yes!" - you can get your home cleaned in eco style today.

To make cleaning "nice and pleasant" we need good cleaning products. By "good" we mean such that are effective, but at the same time safe for us and all household members (pets, plants, etc.). Unfortunately, the vast majority of available cleaning products contain many toxic substances which irritate our skin, often causing allergies. The awareness of using body cosmetics with natural ingredients is growing, but cleaning products are neglected, and yet, when cleaning, a lot of substances are emitted, which we inhale and which remain on the surfaces where we eat or play with children. It is very important for our health that our cleaning products also contain ingredients that are safe for us.

Fortunately, we already have a selection of natural ready-made cleaning products, but we can also make such products at home.

Most zero waste cleaning products can be prepared from simple and commonly available ingredients: baking soda, vinegar, household soap, lemons.

### Eco-friendly dishwashing liquid

Ingredients:

- 500 ml of hot water,
- 10 g soap flakes (e.g. from marseille soap or farm soap),
- a tablespoon of vinegar, a tablespoon of soda,
- 3-4 drops of essential oil (e.g. tea tree, peppermint).

Preparation: Dissolve the flakes thoroughly in hot water, leave to cool, stirring a few times during this time. The mixture should thicken slightly. When the liquid has cooled down, add the vinegar, baking soda and oil. Stir and pour into a bottle.

### Homemade floor cleaner

Just dissolve 30-40 g of grated economic soap flakes in 2-3 liters of water and add 3 tablespoons of vinegar (it will strengthen the effect of the liquid).

### Zero waste multi-purpose liquid

Ingredients for approximately 500 ml of liquid:

- 1 teaspoon each of baking soda, borax,
- 2 tablespoons of vinegar,
- 1 tablespoon of liquid household soap,
- 2 cups of hot water,
- 10 drops of your favorite essential oil.

Preparation: Mix all the ingredients and pour into a bottle with an atomizer.

### The ecological way to clean carpets

Ordinary kitchen soda can help. Its amount depends on the size of the carpet. Spread a thin layer of baking soda on the carpet and leave for 30 minutes (it is better not to have small children or pets in the room during this time). Vacuum as usual.

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### Natural product for wooden furniture

To prepare it, mix 2 teaspoons of lemon juice, 2 teaspoons of olive oil and 2 teaspoons of water. The quantities given are enough to prepare a portion for one cleaning. Lemon juice loses its freshness quickly, so you can't prepare it to spare.

### DIY oven cleaner

To remove food residue and grease from the oven grill and baking tray, place the grill on a baking tray and pour boiling water over them. Add about 25 g of grated household soap and 5 tablespoons of baking soda to the water. Leave for about 2 hours. After this time, the dried residue can easily be removed with a washer or brush.

### Eco-friendly glass cleaner

How to make an eco-friendly and effective glass cleaner? Nothing simpler! Mix vinegar and water in a ratio of 1:1 and pour into a spray bottle. The vinegar smell fades quickly!

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Source: <http://ekologiczni.com.pl/wplyw-detergentow-na-zdrowie-i-srodowisko/>

### Eco-friendly kettle descaler

To remove limescale from your kettle, you don't need to buy special products. Just vinegar mixed with water (1 glass of vinegar and 1 glass of water). Pour the mixture into the kettle, boil, leave for 90 minutes and rinse.

## Homemade bedding spray

### Ingredients:

- 2 tablespoons of vodka,
- ¼ cup of water,
- 10 drops of essential oil (e.g. lavender, grapefruit).

**Preparation:** Mix water and vodka, add essential oil. Pour into an atomizer bottle and shake to thoroughly combine the ingredients.

## Pipe-cleaning agent

An important preparation in household cleaning. Fortunately, the pipes can be cleaned expressly by natural means. Pour ¼ cup of baking soda into the pipes and pour 1 cup of vinegar over it. Leave this mixture in the pipes for at least 20 minutes so the ingredients can react and remove the dirt. Then pour hot water over the mixture in the pipes.

## Liquid soap

### Ingredients:

- 30g of grey soap,
- 500 ml of water.

**Preparation:** Boil the water, in the meantime grate the grey soap.

Put the soap in a bowl, pour boiling water and stir with a whisk until completely dissolved. Allow to cool, pour into dispenser bottle. If the soap is too thick, add warm water and stir. If too thin - add more soap.

Both homemade liquid soap and other cleaning products should be prepared in glass bowls, never in plastic containers.

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As you can see, we only need a few simple ingredients to create homemade cleaning products. Thanks to this, we do not destroy our planet, our health, but also our wallet.

There are more and more brands on the market that create their products in the spirit of sustainability and care for the environ-

ment. Just look for it! We believe that there will be more and more such companies and that they will soon win the battle for customers' favour, thanks to which the level of environmental degradation will be significantly reduced.

We are living in times that seem to be a turning point in the history of mankind, and it is up to our generation to decide whether this will be a period of prosperity and universal happiness, or the beginning of a complete collapse.

Technology and civilisation will nevertheless remain factors that destroy the environment, in a way their natural antagonists. Therefore, the issue of pollution is slowly becoming the subject of interest of more and more countries.

## **LONG-TERM EFFECTS OF THE CHANGES INTRODUCED**

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Industrial development is changing our planet more and more. Weather phenomena are becoming more dynamic, and more animal species are becoming extinct. Do we have any influence on what is happening around us? What can we do? Give the next generation a chance, we can do a lot by changing our habits. The ultimate goal is to shape a generation that will look at the environment from an "I do" perspective. Instead of demonizing and fighting with huge corporations, we should shape our consciousness in such a way that large corporations will have to adapt to the requirements of consumers, because the legislative fight of individual countries against them is a lost cause.

As part of the 3Rs, you can ensure that you use as few chemicals as possible in your home. Giving up or at least significantly reducing the purchase of chemicals will reduce the negative impact on the environment. It is worth thinking about, especially that they can be easily replaced by others.

The 3Rs not only tell us how to buy less cleaning products. Thanks to them we learn how to use the potential of the items we own. It is worth to be aware, check the composition of the products, learn, look for new solutions. You don't have to take the plunge right



away. By taking small steps you can introduce significant changes. Important for yourself, for the environment, and above all for the planet. It is an effort to reduce the production of waste, and thus not to pollute the environment.

Allergies now affect 30% of the population. One in three people is therefore allergic, and the incidence of allergies is increasing along with the chemicals we buy. Natural cleaning products are therefore not only an excellent alternative to chemicals, but also a healthy and comfortable way to clean in the homes of allergy sufferers. After all, constant itching of the skin, sneezing or rashes can be a nuisance during daily activities. Eco-friendly hypoallergenic cleaning products meet the special requirements of allergy sufferers with very sensitive skin. They do not irritate, are fragrance-free and yet equally effective. Manufacturers of eco-friendly cleaning products offer special product lines without fragrance, certified for allergies and newborns, se with bleaching agents exclusively based on active oxygen and without brighteners or optical brighteners. In this way, every allergy sufferer can feel clean and fresh in their own home without sudden attacks of shortness of breath or disturbance of the hydrolipidic film of the skin.

The environmental impact of cleaning products is well researched, but despite this, there are still many myths associated with the subject. The most common one is that the only "green" preparations are the "chemical-free" cleaning products. The second - that "green" products are ineffective. The third - that the household cleaners we use are "disposed of" in sewage treatment plants.

In most of the popular preparations there are a lot of detergents which are dangerous for the environment - especially products designed for unblocking pipes, various types of stain removers and bleach are on the ecological "black list". They contain corrosive and irritating substances such as sodium hydroxide, hydrogen peroxide, sodium carbonate or sodium hypochlorite. They are extremely effective in removing dirt and polishing surfaces, but they have one basic disadvantage - they take a very long time to decompose and are - literally - deadly.

Synthetic cleaning agents, which constitute a part of municipal wastewater, are not fully removed in wastewater treatment plants and, therefore, pollute water bodies - in extreme cases, this may

lead to the destruction of local flora and fauna. The most common phenomenon associated with the discharge of incompletely treated wastewater is eutrophication of waters (the so-called blooming of reservoirs associated with high phosphate and nitrogen concentrations), as well as soil degradation. The consequence of this is water contamination, which becomes unusable not only for animals, but also for us - cleaning our homes, but polluting everything else.

What can you do to clean "healthier"?

- Remember that natural cleaning products can sometimes be as effective as synthetic alternatives,
- If you use common detergents from the store shelf: use personal protective equipment. Protective gloves are acceptable, but a mask and goggles seem excessive to you? Look for information about being around fumes from ammonia, chlorine, quaternary ammonium salts and formaldehyde - all of which are found in most common cleaning products,
- Read labels of cleaning products - the labels will tell you exactly what kind of dangers are connected with using a given detergent,
- experiment - think about where you need industrial detergents and find it hard to give them up (e.g. washing powder) and where you can make room for natural cleaning products. Not only will your health benefit from this, but you will also produce less waste and probably save a lot of money,
- Don't be discouraged - everyone will sooner or later come across an „ecological junk“ which will not work for them. A good example is laundry nuts, which many people describe as completely ineffective in cleaning clothes. However, this does not mean that all „green“ products are ineffective.
- recycle - „professional chemicals“ or synthetic cleaning products from leading companies are usually packaged in bottles that are perfectly recyclable. You can also reuse them by filling them with homemade bio cleaning products,
- use cleaning products not tested on animals.

The hygiene hypothesis, a theory that emerged with the end of the 19th century, argues that the human body needs exposure to different types of microorganisms. Thus, it stimulates the human immune system as early as infancy and childhood.

Cleaning the house too intensively, especially with strong preparations with germicidal properties, may lead to the deterioration of immunity, development of allergies, asthma or other diseases.

## RESOURCES

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Take the challenge and start the 3R's

# Reduce. Reuse. Recycle.

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