GREEN CLEANING

minus the Greenwashing B.S.!

with The Permacrafters

CRISTINA ROJAS BOZOVICH + CHRISTELLE SIOHAN

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WELCOME, PERMACRAFTER!

Welcome to Green Cleaning minus the Greenwashing B.S.!
Congratulations, you've just taken a big step towards reducing your exposure to toxic chemicals!

This book has been lovingly prepared for you to use as a handy reference for all your cleaning needs. It was originally created to accompany our online cleaning video workshop, available at a discount on our website with coupon code: GREENCLEANKINDLE.

To help you get started on the right foot, this book contains convenient checklists, guidelines, recipes, printable instructions, sticker labels, as well as your monthly cleaning schedule.

WRITTEN BY CHRISTELLE SIOHAN
DESIGNED BY CRISTINA ROJAS

ABOUT THE AUTHOR

Christelle is a bubbly environmental educator and permaculture instructor who infuses optimism in her classes and laughs at her own jokes. Originally from Geneva, Switzerland, her studies and career have focused on environmental protection. She's multilingual, a mama (or "Permamacita"), a beekeeper, and a foraging enthusiast with an insatiable curiosity for life. Christelle is passionate about healthy living and - let's be honest here - does not love cleaning, but it's an inescapable part of life. Together with her Permacrafters colleague Cristina, she spent two years diligently developing and fine-tuning nontoxic planet-friendly cleaning recipes and tricks for her family to safely use.

ABOUT THE DESIGNER

Cristina is an outgoing Peruvian crafter who loves meeting new people, exploring her surroundings, and creating recipes from scratch. Her inquisitiveness led her to discover permaculture, and she's been learning to apply it to her life ever since. She is the brains and creative master behind Permacrafters' beautiful website design and this book. She & Christelle spent months testing cleaning recipes and tricks to bring you only the best tried & tested recipes.

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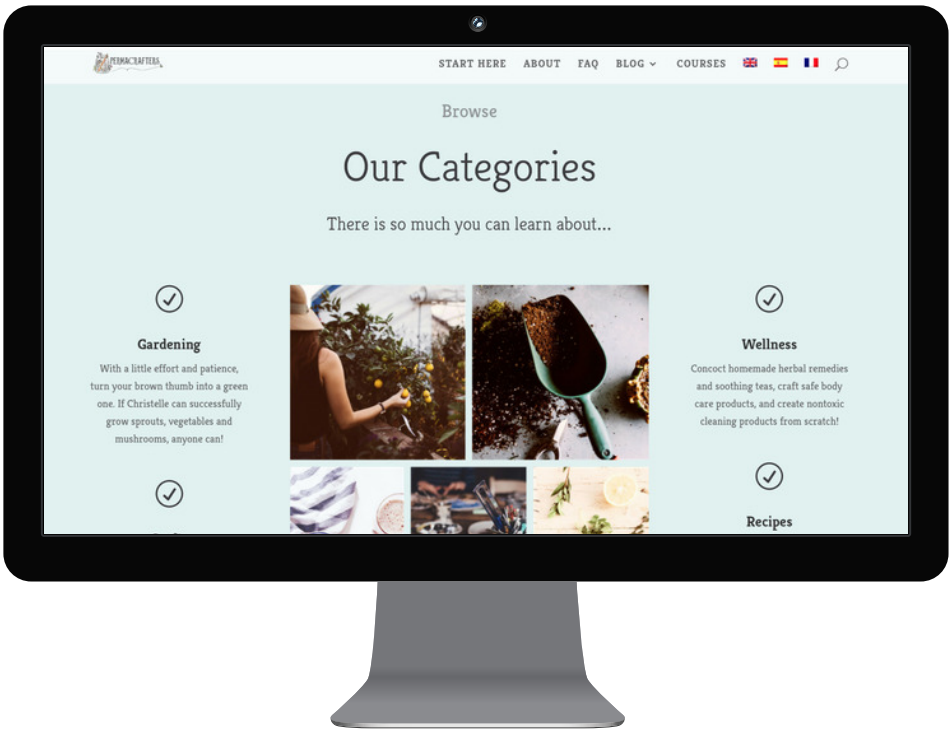
WHAT IS PERMACRAFTERS?

Permacrafters, LLC, is a permaculture lifestyle blog and online school founded by Christelle Siohan and Cristina Rojas. Our mission is to share self-reliance skills and encourage creative permaculture thinking for an abundant life. We love pouring our creativity into all aspects of our lives, with sustainability in mind. We enjoy handcrafting our own body products, cleaners, herbal medicine, decorations, and tools, and we have fun growing our favorite foods and preparing them right at home. The guiding ethics and principles of permaculture help us in designing our crafts and our lives.



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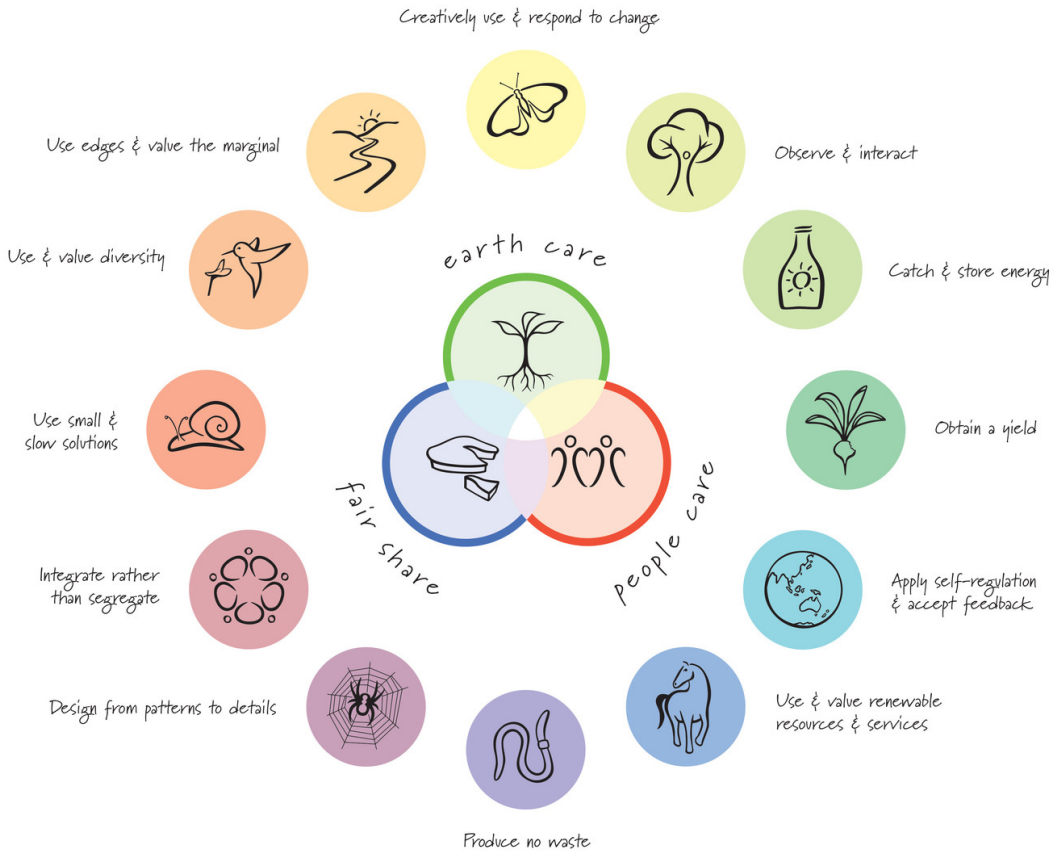
WHAT IS PERMACULTURE?

Permaculture is an ethical design system for sustainable human culture. It was created as a response to Earth's diminishing resources and energy. This system of agricultural and social design principles is focused on imitating patterns and features observed in natural ecosystems. The principles are whole-systems thinking tools that we can use all together to creatively design our environment and our behavior.

Permaculture is not a collection of techniques: use the principles and apply them accordingly based on your specific situation. As you design your life within the framework of permaculture, you will develop new skills and build resilience.



HOW DOES CONSCIOUS CLEANING FIT INTO PERMACULTURE?

Permaculture can be integrated into all aspects of your life. It is concerned with responsibly providing human needs from nature. By cleaning your home consciously, in such as way that you care for your health, the health of others, and the planet, you're applying the 12 principles of permaculture, as listed below:

OBSERVE AND INTERACT

This permaculture principle asks us to observe our surroundings or our situation without a lens of criticism or judgment, because "beauty is in the eye of the beholder". Careful observation in this context may include taking a good look at the toxic chemicals present in our everyday cleaning products and how humans and our environment are being affected. We may observe how other countries choose to handle toxic chemicals, or how our great-grandparents sanitized their living spaces, or what plants we have locally that could be used for cleaning. This principle asks us not to jump to conclusions ("Nothing can be done about the problem!", "Green cleaning is just for the wealthy!"), but simply to observe and become conscious of the situation we find ourselves in.

This principle also teaches us the importance of interaction: we must take action and start with what we have, even if we have little knowledge about a subject. Your actions in the right direction don't have to be perfect for them to count. They can be actions that directly affect you and your family or ones that also benefit the larger community. And remember that so-called "failure" is useful, as long as you learn from it and apply the lessons.

CATCH AND STORE ENERGY

This principle is about collecting resources when there is an abundance of them, so that we may use them in times of scarcity. In this book, we teach you several ways of cleaning off the grid. For instance, in the fall, when it's horse chestnuts season, you can collect a significant amount to get you through the rest of the year. They can then be used year-round for laundry cleaning purposes. Another example would be collecting aromatic flowers while they are abundant, and dehydrating them to create a pot-pourri that will last far beyond the life of the fresh flowers.

The store-bought products that are mentioned in our class (baking soda, vinegar, etc.) are abundant and not at risk of overexploitation. Still, learning about alternative cleaning methods is a good way to keep handy skills in your back pocket in times of need (and it also has a lower carbon impact). Did you miss horse chestnut season? Go foraging for English ivy year-round! Are you all out of cleaning products at home? Think again! If you've got old coffee grounds, a potato, a lemon, salt, some kombucha, or even some leftover ash in your fireplace, you've got yourself a full set of cleaning products!

OBTAIN A YIELD

In creating this book, it was important to us to create recipes and tips that 1) would truly clean effectively, that 2) would actually cause no harm to the planet, and that 3) would really be safe for you. That is why 1) we took the time to test hundreds of cleaning tricks or recipe combinations, why 2) we included foraging for cleaners and thrifting for gear, and why 3) we took the precautionary principle when choosing which products we added to our safe list.

APPLY SELF-REGULATION AND ACCEPT FEEDBACK

Our exposure over time to toxic chemicals in everyday cleaning products has led to chronic health problems including respiratory issues, cancers, and hormonal disruption. The connections between the chemical culprits and the health symptoms are slow to emerge, and as time goes on, the feedback we are receiving from scientists is increasingly concerning. We must regulate the chemicals that are in circulation, as well as new ones that enter the market. We must also regulate the cleaning materials like microfibers that end up polluting our waterways. To do so, we can step away from these products in our own lives, get involved to support our communities, and vote.

USE AND VALUE RENEWABLE RESOURCES AND SERVICES

None of the ingredients that we use in our book are at risk of running out. We encourage you to use resources (like plant-based cleaners) that are renewable. While not all choices will be perfect (they all require oil for transportation), our focus is on reducing our dependence on cleaners that are very damaging to the environment and to your health. Our goal is also to encourage you to analyze your consumptive behavior and determine what cleaning gear you can reuse instead of purchasing brand new.

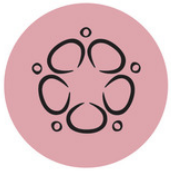
PRODUCE NO WASTE

In nature, there is no waste: it's a cyclical system. The throwaway culture that we live in has waste as an end product. Resources are extracted and sent to the landfill. This principle asks us to break ourselves out of this linear system by valuing resources.

In every part of this course, you will see that we put a lot of value in existing resources. We encourage you to use your existing cleaning gear or to find secondhand items. We call on you to ditch single-use cleaning gear (paper towels, mop wipes, etc.) and switch to only reusable gear. We support repurposing old clothing or household items to craft your own gear. We love to see old spray bottles or cleaning containers being reused (when safe to do so). We teach you the cleaning value of items that would otherwise be discarded: wood ash, kombucha vinegar, coffee grounds. We help you select products that are compostable and won't contaminate the waterways. Any step to value resources is a step in the right direction.

DESIGN FROM PATTERNS TO DETAILS

This principle focuses on patterns that we can observe in nature and in society when we take a step back. Gaining perspective on an issue can help us design ourselves out of a problem. In terms of this book, we lay out the issues at hand in chapters 2 through 4. We teach you how to personally weave your way out of the toxic cleaners problem in this book, but there is more work to be done. That is why in your homeplay, we encourage you to share what you are learning with your friends and family, and continue the conversation about nontoxic living by joining or starting a Savvy Women's Alliance chapter. We also will encourage you to use your voice and to vote (see the template letter to a daycare facility).



INTEGRATE RATHER THAN SEGREGATE

Cleaning your home without the risk of getting cancer and without damaging the planet should not be a privilege reserved to those who can afford it. We took a risk in pricing our online cleaning class low (which accompanies this book), but it is a risk we are willing to take because we firmly believe that access to our class shouldn't be restricted to those who are comfortable financially. We realize that money isn't the only form of privilege that might stop someone from taking this class. Time and language barriers may be other factors. This is why we encourage you to share what you are learning and to join or start a Savvy Women's Alliance chapter. It's also why we also filmed the online class in French and Spanish to reach a larger public. If you appreciate the work that we are doing, please share widely. The more participation we have, the easier it is for us to keep our prices affordable, and to keep producing these types of books and classes.

USE SMALL AND SLOW SOLUTIONS

We live in a world of fast solutions: using single-use mop wipes in the name of convenience; approving chemicals for use on the market before testing them for safety; using products effective at cleaning without delving more into those that won't damage wildlife when being produced or pollute waterways when being discarded.

Some of the solutions we are proposing are slower and some of them are just common sense. On an international level, we believe consumers should have a right to know what is in their products and the health risks associated to them. We also believe that to protect human health, nations should adopt the precautionary principle with any existing chemicals on the market or chemicals waiting for approval. On an individual level, we are proposing a slower solution, which is to take some time to learn about what resources can be used to produce more sustainable outcomes. Slow and steady wins the race.

USE AND VALUE DIVERSITY

If this book teaches you one thing, it's hopefully to be resourceful! For every cleaning issue, we offer various solutions depending on your location, what you can afford, and the time you have on your hands. When it comes to sponges, for instance, you will learn how to grow a sponge, make your own sponge from old socks, and which one is the least harmful to buy at the store. By giving you multiple options, we hope you will remember when you are out camping that you can use local plants, lemons, salt, coffee grounds or even a potato as cleaning agents when you're in a pinch. Or, for example, you might rely on baking soda for 90% of your cleaning needs. If you move from the States to Europe, however, you'll find that the production of baking soda there is much more damaging for the environment. How will you change your cleaning recipes, then? We choose to teach you about a diversity of cleaning agents, so that you'll be more equipped to jump on the challenge.

USE EDGES AND VALUE THE MARGINAL

The proverb that accompanies this principle is: "Don't think you are on the right track just because it's a well-beaten path". It calls for us to value the marginal, which in this context can refer to safe natural cleaning agents we may never have even heard of or thought of before. These can be useful to us in times of need. Valuing the marginal also includes marginal people whose voices are not being heard; perhaps workers who are exposed to cleaning products' hazards without having been made fully aware of the dangers. This principle invites everyone to the table, because everyone has something to contribute.

CREATIVELY USE AND RESPOND TO CHANGE

We have faith that in time, there will be better ingredient transparency for cleaning products, consumer protection, and care for the Earth. In the meantime, creatively respond to the situation you're in. There are different points of resistance, be it personal or community-wide. Taking this class and learning how to be resourceful in making your own products is one way to stop contributing to the problem and to design yourself out of it. But you needn't stop there: share about what you're learning far and wide. Speak up where you can. Start a nontoxic living group in your community. Involve your workplace, your daycare, your school. Support 'Right to Know' bills. Vote. Create the world you want around you by implementing solutions that work for your home, and inspiring others to follow suit.

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 1

WELCOME

Welcome to Green Cleaning!

You're here because you want to clean your home without the risk of getting yourself or your family sick and without trashing the planet. Get ready to learn all about how to effectively, affordably, and safely sanitize your home without compromising those most basic values.

CLEANING EFFECTIVELY

Using toxic chemicals to clean your home is not only dangerous, but also unnecessary to get the job done. Our goal in creating this book was to share safe recipes and tricks that we knew for sure worked. To do so, we may have overcommitted ourselves! We stained our clothes, our carpets, left dirty areas unattended for a bit too long, just to test dozens of recipe combinations! We took one for the team to get you only the best tried and tested recipes that actually work!

CLEANING AFFORDABLY

Cleaning your house without the risk of getting cancer should not be a privilege reserved to those who can afford expensive "green" cleaning products and gear. The majority of the recipes we present in this book are made with very cheap and common ingredients such as baking soda, vinegar, salt, and coffee grounds. We've also partnered with Aromatics International and NaturOli who generously offered discounts on their essential oils and soap nuts for our online course students.

Throughout the book, we encourage you to reuse items whenever possible. This includes going thrifting for cleaning gear, repurposing old shirts, socks, and toothbrushes, reusing old spray or pump bottles (when it's safe to do so), or even crafting sponges out of old stockings. There are many ways to clean on a small budget and minimize waste in the process.

SAFE FOR YOU

We know safety is important to you. You're tired of being exposed to carcinogens, hormone disrupters, and neurotoxicants (and who knows what else!) hiding in common cleaning products on the market. Like the European Union, we adopted the precautionary principle when selecting ingredients to work with! Please note that even ingredients like vinegar should technically be handled with gloves to protect your skin in the long run. Since this book is all about safety, you may find us asking you to be extra cautious rather than the other way around.

SAFE FOR THE PLANET

This book is about making choices that are less harmful to the planet. It is a conscious cleaning book in the sense that:

- we encourage you to be as resourceful as possible by reusing and repurposing to minimize waste
- the ingredients we list do not pollute our waterways (and some can be composted after use)
- the products we list are not toxic to your health, to the environment, and are not deadly dangerous
- the products we list are produced responsibly as compared to other products on the market

WHAT IS GREENWASHING?

Greenwashing is when companies use misleading claims or false advertising to promote the idea that their product is eco-friendly, when it is not. Examples: 1) A company is selling an "Earth-friendly" bamboo mop instead of a plastic mop, failing to mention that the bamboo is treated with chemicals that are neurotoxicants and toxic to the environment. 2) A microfiber cloth company is selling an "eco-friendly" cloth that is reusable and reduces the need for cleaning products, failing to mention that it contributes to microplastic pollution.

Our book is all about green cleaning minus this greenwashing B.S. So let's call ourselves out on where we fall short: Other than going foraging for English ivy to make homemade soap, making your own kombucha vinegar, using coffee grounds, or collecting ash from a firepit, NO product is going to have a carbon neutral footprint. Almost every ingredient we use in our book will need to be produced, shipped, and discarded. Additionally, some of these otherwise "eco-friendly" products might come in single-use packaging or wrapped in plastic. Not all the ingredients on our list are going to be completely "green".

The current world we live in makes it difficult, if not impossible to make perfect choices. So, green perfection is not our goal. Our goal is to minimize our environmental impact by making way better choices for the planet. We will encourage you to always be resourceful, support companies who are getting things right whenever possible (i.e. sustainable production, package-free), and to become more conscious in the decisions you make to clean your home.

HOMEPLAY

Before you jump in, what are your main goals in reading this book? What are things you can take away from this book that will make you feel successful? Does it involve phasing out all toxic cleaners from your household? What safe cleaning products do you wish to make yourself? Do you want to put aside a weekend to make all your DIY cleaning products to have one year's supply? Would you like to get into an easy home-cleaning routine? Do you wish to share this knowledge with your loved ones? When would you like to start incorporating safe cleaning habits?

We want you to be successful as you create a healthier and truly cleaner home! Write down your goals. If you wish, add a deadline that is both realistic and challenging enough to motivate you to take action.

Goal 1:

Goal 2:

Goal 3:

GREEN CLEANING

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CHAPTER 2

TOXIC CHEMICALS IN EVERYDAY PRODUCTS

How I became interested in toxic chemicals

Part of me always knew there were dangerous chemicals lurking in our household. My wake up call that shook me out of my passive compliance was watching The Human Experiment documentary. As I researched further, I realized the extent to which we are constantly being exposed to carcinogens, hormone disrupters and neurotoxicants day in and day out. I hadn't realized just how catastrophic the situation really was on our health. I had been struggling with serious hormonal imbalance and had just received the news that I wouldn't be able to bear children without hormone therapy. That's when I got rid of all the hormone disrupters in my personal care products, cleaning products, and food. I am unsure whether these big changes I made are responsible for what happened next, but a year later, I became pregnant, and I no longer suffer from hormonal imbalance.

I had always felt like there wasn't much that could be done to escape toxic cleaners without paying a good amount of money on the safe "green" products. Cleaning was my least favorite pastime, so that can probably explain my lack of interest in digging further. That is, until my good friend Gilly Webster offered a workshop on safe cleaning. Cleaning with vinegar?! How in the world had I never been taught this most basic skill? Or maybe someone had told me, but I had been too busy nodding my head while really I was thinking of anything but cleaning. Either way, that was when the light bulb clicked inside my

head. Ever since then, I've been testing new recipes, trying new ingredients, and discovering more and more about how to clean safely, effectively and affordably. I even took my nontoxic living a step further by building a nontoxic straw bale and cob home with the natural builder Greg Allen at the Eco-Institute in North Carolina. I was lucky enough to call that house my home for several months, and that is where the workshop that accompanies this book was filmed.

Chemical Use in the United States

Right now there are over 80,000 chemicals in use on the market in the United States (1). About 2,000 new ones are introduced every year for use in our personal care products, our household cleaning products, our food and many everyday items (1). In 50 years, chemical use in the US has increased over 2,000% (2). Every day, 10s of millions of US women use 12 body-care products and the average American is exposed to 168 different chemicals from these personal-care products every day (3). That's not counting our exposure to the chemicals in our cleaning products, which we make use of daily.

(1) National Toxicology Program, U.S. Department of Health and Human Services, accessed July 2018, URL: https://ntp.niehs.nih.gov/about/index.html

(2) The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

(3) Environmental Working Group, Exposures Add Up: Survey Results, accessed July 2018, URL: http://www.ewg.org/skindeep/2004/06/15/exposures-add-up-survey-results/#.W0ykAX6Lmb8

CHEMICAL USE IN THE UNITED STATES

RIGHT NOW THERE ARE OVER 80,000 CHEMICALS IN USE ON THE MARKET IN THE UNITED STATES.

2K

2,000 NEW ONES ARE INTRODUCED EVERY YEAR IN:

- PERSONAL CARE PRODUCTS,
- HOUSEHOLD CLEANING PRODUCTS,
- FOOD
- AND MANY EVERYDAY ITEMS

IN 50 YEARS, CHEMICAL USE IN THE US HAS INCREASED OVER 2,000%

10S OF MILLIONS OF US WOMEN

USE 12 BODY-CARE PRODUCTS

&

AVERAGE AMERICAN

IS EXPOSED TO 168 DIFFERENT CHEMICALS FROM THESE PERSONAL-CARE PRODUCTS EVERY DAY.

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Safety Testing for Chemicals in the United States

Of course, not all chemicals are toxic. A chemical is a just substance used in or made by a chemical process. Still, there is substantial concern among scientists and citizens over the potentially toxic effects of the chemicals that are in our household cleaners and our body-care products.

You might ask yourself: Why should I be concerned about these chemicals? Why should I care? These chemicals must be tested for their safety, right?

Unfortunately, no. Most consumers assume so, but the truth of the matter is that the majority of these chemicals do not undergo safety testing (4). Why is that? Industries in the United States do not have to scientifically demonstrate the safety of a chemical before it is available for sale on the market (4)! A chemical is by default considered safe until there is conclusive evidence to the contrary (5). As consumers, we are the lab rats in this experiment. So, cosmetics companies, for instance, might tell you "our product is safe!" but in reality, 89% of the ingredients used in cosmetics have not been

(4) The New York Times, "Think Those Chemicals Have Been Tested?" April 13, 2013, URL: https://www.nytimes.com/2013/04/14/sunday-review/think-those-chemicals-have-been-tested.html

(5) Environmental Working Group, Exposures Add Up: Survey Results, accessed July 2018, URL: http://www.ewg.org/skindeep/2004/06/15/exposures-add-up-survey-results/#.W0ykAX6Lmb8

assessed by the Food and Drug Administration (FDA) or by the industry itself (6). The thing is, the FDA has minimal authority to regulate the ingredients in cosmetics – they have no pre-market approval authority (7). So, who's assessing a product's potential toxicity before it's sold? Sometimes no one; sometimes it's the industry selling the product, but there's no disinterested party that's doing the assessment (7). In the United States, cosmetic firms or cleaning companies, have the option of conducting whatever safety tests they see fit – no one is asking them to scientifically prove their product is safe (7).

So does that mean that a product is unsafe? No. But there's no independent verification to say it's safe either.

(6) Environmental Working Group, "FDA Warns Cosmetics Industry to Follow Law on Untested Ingredient", 27 September 2007, URL: https://www.ewg.org/news/testimony-official-correspondence/fda-warns-cosmetics-industry-follow-law-untested-ingredients#.W0yyvH6LlPM

(7) The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

History of USA's pro-industry law

The United States is getting isolated in terms of how it determines the safety of chemicals on the market. Why does the USA have such a pro-industry law?

In 1976, under the Toxic Substances Control Act, the Environmental Protection Agency (EPA) became in charge of overseeing the US chemical industry. But when that came into law, there were already 62,000 chemicals in use on the market (8). So what did they do about those? They grandfathered those 62,000 chemicals in (9). They didn't spend resources testing whether those were actually safe; they just kept using them as before. Because of that, industries got away with using toxic chemicals like asbestos, lead, vinyl chloride and Bisphenol A, all of which were found to be toxic and are now highly regulated.

In June 2016, President Obama passed into law the Frank R. Lautenberg Chemical Safety for the 21st Century Act. This new law overhauls the Toxic Substances Control Act and requires the EPA to test the 10s of thousands of chemicals on the US market that are currently unregulated. The rate at which the testing will occur could take centuries before completion, but it is an excellent step forward (10).

(8) Environmental Protection Agency, About the TSCA Chemical Substance Inventory, accessed July 2018, URL: https://www.epa.gov/tsca-inventory/about-tsca-chemical-substance-inventory

(9) Environmental Health Perspectives, accessed July 2018, URL: https://ehp.niehs.nih.gov/124-a182/

(10) PBS News Hour, "It could take centuries for EPA to test all the unregulated chemicals under a new landmark bill", URL: https://www.pbs.org/newshour/science/it-could-take-centuries-for-epa-to-test-all-the-unregulated-chemicals-under-a-new-landmark-bill

Determining risk factors: The US vs. the EU

There are many scummy products out there (pun intended). When it comes to chemicals in these products, the US and the European Union have completely different ways of determining what a "risk" means.

The EU evaluates the toxicity of a chemical by looking at the accumulation of proof against it. If it's potential to cause harm is likely, they remove it from circulation. They have a precautionary approach (11).

The US doesn't take action so readily. It waits for conclusive scientific evidence before taking the issue to the courtroom and attempting to remove it from circulation (11). However, assessing the precise effect of chemicals is very hard because chemical exposure occurs in small quantities over time. Even if you can prove there is a risk, there are still legal barriers blocking the EPA from taking action (11).

What is the outcome, then? Many substances that have been removed from circulation in consumer goods in the EU are still widely used in the States (12).

(11) Environmental Health Perspectives, accessed July 2018, URL: https://ehp.niehs.nih.gov/124-a182/

(12)IFL Science, "Banned in Europe, Safe in the U.S."accessed July 2018, URL: http://www.iflscience.com/health-and-medicine/banned-europe-safe-us/

EU's REACH Legislation & US response

The EU has required that industries provide data on the toxicity of 10s of thousands of chemicals that have never been tested in the States. In 2007, the EU developed a new legislation called REACH, which stands for Registration, Authorization and Evaluation of Chemicals. It was created to remove toxins from circulation in consumer goods. REACH requires industries to supply toxicity data for 1,000s of chemicals in their products. It's up to the industry to scientifically prove that their products are in fact safe before they get on the market (13). The industry is responsible to answer questions like: Are there potential dangers associated with your product? Does it cause genetic mutations? Does it contain carcinogens or endocrine disrupters? Do they damage the reproductive system? An independent party then verifies this research. With this legislation, unsafe substances are consistently being removed from circulation (14). In this instance, the EU is prioritizing consumer health before profits.

(13) European Chemicals Agency, "Understanding REACH", accessed July 2018, URL: https://echa.europa.eu/regulations/reach/understanding-reach

(14) The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

Since REACH passed, the United States had to either adapt to this new legislation and be forced to remove toxic substances from the products being shipped to the EU to meet the EU's higher standard (15), or lose the EU market. Of course, losing the EU market was out of the question, so the US adapted. But here's the kicker. Many US industries took out toxic chemicals for the EU market, but they didn't do the same for their own country – they asserted that they couldn't do the same in the US. Until 2014, Johnson's baby shampoo in the States contained formaldehyde and 1-4 dioxane, 2 possible carcinogens, but sold the same version of the shampoo in Europe without those ingredients. So these companies have alternatives, they just aren't implementing them. Johnson's finally removed these dangerous ingredients in 2014 after public scrutiny and pressure from environmental groups (16).

Cosmetics companies are paying 100s of 1,000s of dollars to lobby against laws in the States that they've already agreed to abide to in Europe (17). Why would they want to keep using those same chemicals that were banned in Europe? Possibly because it's cheaper to use them. Possibly because it creates a slightly less effective product if they don't. In any case, the priority is certainly not consumer health.

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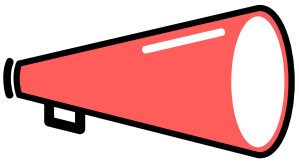
(15) European Chemicals Agency, "REACH, CLP and biocides for non-EU companies", accessed July 2018, URL: https://echa.europa.eu/support/getting-started/enquiry-on-reach-and-clp

(16) New York Times, Katie Thomas, "The 'No More Tears' Shampoo, Now With No Formaldehyde", 17 January 2014, accessed July 2018, URL: https://www.nytimes.com/2014/01/18/business/johnson-johnson-takes-first-step-in-removal-of-questionable-chemicals-from-products.html

(17) The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

HOMEPLAY



Spread the word! Talk to your friends about what you learned today. Start a conversation about the toxic chemicals lurking in everyday products. The more we spread awareness, the better it will get. Once you've learned about the safe alternatives in this book, share tips with your friends as well. List a handful of friends that you will reach out to:

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CHAPTER 3

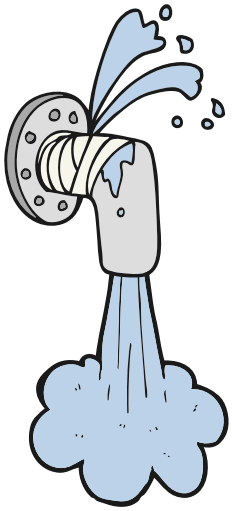
HEALTH RISKS OF CHEMICALS IN EVERYDAY PRODUCTS

With both cleaning and personal care products, there are risks of acute or immediate hazards and then long-term health effects.

Acute hazards:

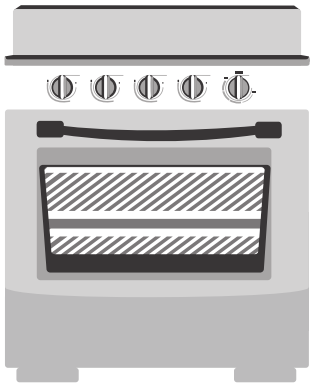
Cleaning ingredients can irritate your skin, your respiratory system, give you watery eyes or chemical burns. The most acutely dangerous products are corrosive drain cleaners, oven cleaners and acidic toilet bowl cleaners (1).

Top 3 acutely dangerous cleaners:



Drain cleaner

Oven cleaner



Toilet bowl cleaner

Chronic complications:

Using industrial cleaning products can lead to chronic health problems, from respiratory issues, to cancers and hormone disruption (as is often a concern with body-care products too). Babies and young children, whose brains and bodies are developing, are the most vulnerable to these toxic chemicals hiding in our cleaning products (2).

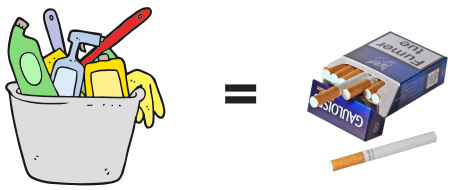
(1) Washington Toxics Coalition, Philip Dickey

(2) Environmental Working Group, "Body Burden: The Pollution in Newborns: Babies are vulnerable to chemical harm", July 14 2005, accessed July 2018, URL: https://www.ewg.org/research/body-burden-pollution-newborns/babies-are-vulnerable-chemical-harm#.W0zoqH6LlPM

Respiratory health

Researchers have long known that exposure to cleaning products can harm the respiratory system. It's well documented that professional cleaners and people who clean at home have a higher risk of asthma and respiratory problems (3). An important study came out shortly after we filmed our cleaning workshop, shedding more light on this issue. It was published in February 2018 in the Journal of Respiratory and Critical Care Medicine. It showed a direct correlation between cleaning and declining lung function. The researchers studied over 6,000 men and women over the course of 20 years. They concluded that women were more susceptible to lung damage than men, and found that "women cleaning at home or working as occupational cleaners had accelerated decline in lung function, suggesting that exposures related to cleaning activities may constitute a risk to long-term respiratory health (3)." Further, their findings suggest that respiratory health is impaired for 10 to 20 years after cleaning activities. The effect size was comparable to the effect size related to

10 to 20 pack-years of tobacco smoking. That means that lung function in women declined as much from cleaning with these products at it would have from smoking 20 cigarettes a day for 10 to 20 years (3)!



(3) "Cleaning at Home and at Work in Relation to Lung Function Decline and Airway Obstruction", Svane et al., Am J Respir Crit Care Med Vol 197, Iss 9, pp 1157-1163, May 1, 2018, copyright by the American Thoracic Society

Breast cancer risk

Since 1975, the rate of breast cancer rose over 30% in both women and men (4). Some of the known risk factors of breast cancer include hormone replacement therapy, later childbirth, not nursing babies, and taking the birth control pill (5). But men don't have any of those risk factors and yet they still face the same increase in breast cancer. In fact, 50% of new breast cancer cases can't be explained by known risk factors (4). Why is that? Scientists are finding that exposure to toxic chemicals on a daily basis may be a significant contributing factor (6). A 2010 study published in the Journal of Environmental Health finds a possible link between breast cancer and the use of household cleaning products containing carcinogens such as methylene chloride (7).

(4)The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

(5) "What Are the Risk Factors for Breast Cancer?" Center for Disease Control and Prevention, accessed July 2018, URL: https://www.cdc.gov/cancer/breast/basic_info/risk_factors.htm

(6) Environmental Health Perspectives, "New Exposure Biomarkers as Tools for Breast Cancer Epidemiology, Biomonitoring, and Prevention: A Systematic Approach Based on Animal Evidence", Rudel et al., September 2014, URL: https://ehp.niehs.nih.gov/1307455/

(7) "Self-reported chemicals exposure, beliefs about disease causation, and risk of breast cancer in the Cape Cod Breast Cancer and Environment Study: a case-control study", Zota et al., Journal of Environmental Health, 2010, 9:40, accessed July 2018, URL: https://ehjournal.biomedcentral.com/track/pdf/10.1186/1476-069X-9-40

Neurological problems, infertility, hormonal issues and more

In both the US and the EU, there are also rising rates of neurological problems, infertility, and hormonal malformations (8). According to scientists, these are likely the troubling effects of our exposure to toxins in everyday products. Cosmetic substances in particular have many endocrine-disrupting chemicals and reproductive toxins, which may be linked to fertility problems (9). 7.3M women in the US are having trouble either conceiving or carrying to term (10), which is a 49% increase since 1998 (8). That amount of genetic change shouldn't happen in just 20 years – so what's responsible? Scientists are finding connections with toxic chemicals in our household products.

The past 50 years, chemical use has risen 2,000%. What else has changed over that same amount of time? Childhood brain cancer is up 38%, leukemia in children 74%, asthma 80%, early onset puberty 55%, ADHD 53%, genital deformities in baby boys 122% and life threatening birth defects 100% (8).

(8) The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

(9) "Are your personal care products affecting your fertility?". Women's Voices for the Earth, Margot White, 3 December 2014, accessed July 2018, https://www.womensvoices.org/2014/12/03/are-your-personal-care-products-affecting-your-fertility/

(10) Center for Disease Control and Prevention, "Infertility", accessed July 2018, URL: https://www.cdc.gov/nchs/fastats/infertility.htm

Could the toxic chemicals in your everyday products be responsible? There is new research coming out all the time connecting the dots and pointing fingers at chemicals in our household products. Could toxic cleaners in your household be negatively affecting you and your loved ones? Yes. If this is unacceptable to you, you're exactly in the right place to learn about how to step away from these risky ingredients and take charge of your health.

HOMEPLAY

Think about the people you care about. What would they change if they learned about this information? Jot their names down now. Later, you can invite them over to make cleaning products together, or make them yourself as gifts to them. Involve those around you in learning about nontoxic living (especially those expecting babies or with small children!). Who will you be making products with or for? Write down their names:

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CHAPTER 4

NAVIGATING LABELS

Ingredients are not required to be listed on cleaning product labels

How do you navigate cleaning products and their labels in the store? Is it worth learning the long list of ingredients to avoid? No, it's not. Cleaning products are not required to list ingredients on their labels (1). Full disclosure is not mandatory even for dangerous ingredients that are acute health hazards (asthma, skin sensitivity) or that are linked to chronic health problems like cancer (1). Many cleaning products manufacturers now list ingredients on their websites, but not on the product containers themselves, where consumers in the stores will actually read them (1). In addition, most of these manufacturers still fail to fully disclose the ingredients online (1).

EXAMPLE 1

Let's have a look at common store-bought items like air fresheners, dish soap, laundry detergents, fabric softeners, toilet paper, perfumes, deodorants, lotions and nail polish. What do all these have in common?

They all have fragrance as an ingredient, to make their products smell "good". But what is fragrance? It turns out, chemical recipes for fragrance are trade secrets in the US, so the industries are not required to list the actual ingredients in the fragrance mix – they just label it "fragrance" (1). And, guess what? A study revealed that 1/3rd of the ingredients used in fragrance are actually toxic (2).

(1) Environmental Working Group, "Cleaning Supplies: Secret Ingredients, Hidden Hazards", accessed July 2018, https://www.ewg.org/guides/cleaners/content/weak_regulation#.W0zwiX6LlPM

(2) The Human Experiment, 2013 documentary by S. Penn, D. Nachman, D. Hardy, C. Matter, and A. Bhave

Phthalates, which are known endocrine disrupters, are often one of the hidden ingredients under the term “fragrance” (3).

EXAMPLE 2

Now let’s look at deodorants, shampoos, toothpastes, mouthwashes, moisturizers, skin cleaners and household cleaners made with ethoxylated alcohols: in these you often find 1-4 dioxane which is banned in the EU given that it’s toxic to organs and is a possible carcinogen. So should you try to avoid buying products with 1-4 dioxane in it? Yes. But, good luck! Because again, it’s not even required to be listed on labels.

You could learn the long list of ingredients to avoid in everyday products, but many of them, like the neurotoxicant toluene, or phthalates and 1-4 dioxane aren’t even required to be listed on labels.

So what’s really in our personal care products? In our cleaning products? In our furniture? In our clothes? In the paint on our walls? As consumers, we don’t have a clear answer, because even if we learn to read labels, many toxic ingredients aren’t even required to be listed.

(3) U.S. Food and Drug Administration, Fragrances in Cosmetics, accessed July 2018, URL: https://www.fda.gov/cosmetics/productsingredients/ingredients/ucm388821.htm#phthalates

Cleaning ingredients are not fully disclosed to workers

What's more, even workers who are exposed to these ingredients are not made fully aware of their hazards (4). Manufacturers are not required to disclose to their workers about hazardous chemicals that are part of trade secret mixtures (4).

State, federal, and manufacturer efforts

Attempts to develop federal legislation to require full disclosure of ingredients in cleaners have been slowed down by industry trade associations (4). In 2011, the Cleaning Product Right to Know Act was introduced, but no decision has been made on this bill yet (4). It would require full disclosure of cleaning ingredients on labels and online, including ingredients that may be considered trade secrets or contaminants.

As a response to the lack of action on the federal level, many states, like California, New York, Connecticut, Illinois, and Maryland have made regulations of their own to improve ingredient disclosure or ensure safer products are being used (4).

(4)Environmental Working Group, "Cleaning Supplies: Secret Ingredients, Hidden Hazards", accessed July 2018, https://www.ewg.org/guides/cleaners/content/weak_regulation#.W0zwiX6LlPM

US manufacturers can also now voluntarily give full disclosure of their ingredients lists through organizations such as the Consumer Specialty Products Associations and the American Cleaning Institute (5).

Actions you can take

As an individual, there are many actions you can take to address the problem. You can buy safer products by using resources like the Environmental Working Group's Guide to Healthy Cleaning which rates over 2,500 U.S. products and ingredients on their health concerns (or their Skin Deep Cosmetics Database which rates ingredients and U.S. body and personal care products). Fillaree is a wonderful shop to start looking for zero waste non-toxic cleaning products. Bring your own containers to fill up your cleaning products in bulk or use their refill subscription service.

Green-certified products sometimes cost more than their non-certified counterparts. If they aren't within your reach, you can start from scratch and make your own safe products at home and know exactly what ingredients are in your recipe.

You can also support state and federal efforts to improve ingredient disclosure and push for safer products. You can even approach managers at your workplace, your school, or your child's daycare to use safer cleaning products that are green-certified.

(5)Environmental Working Group, "Cleaning Supplies: Secret Ingredients, Hidden Hazards", accessed July 2018, https://www.ewg.org/guides/cleaners/content/weak_regulation#.W0zwiX6LlPM

HOMEPLAY

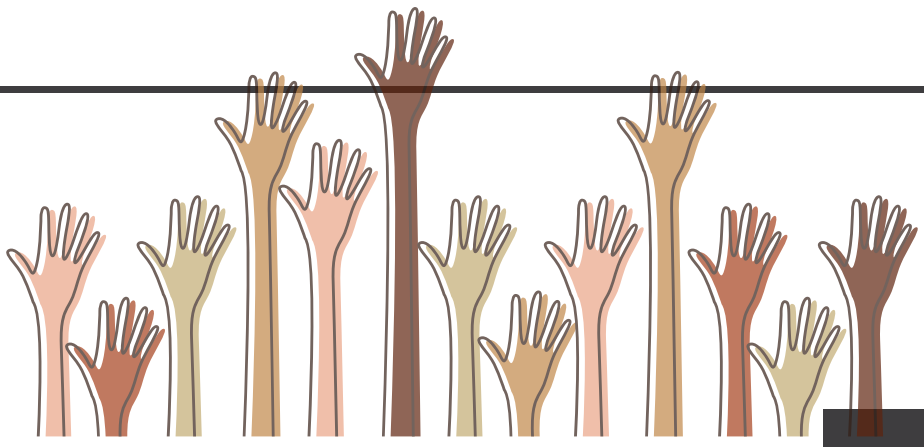
Take action! Before throwing out your toxic products (we will teach you how to safely do so in chapter 9), decide what action you will take to impact your local community. How will you make a difference outside of just your home? Will it be asking your workplace to use safer products? Will you join or start a local Savvy Women's Alliance chapter to raise awareness and share tips about nontoxic living? Will you sign or start an existing Right To Know petition for transparent labeling? Dream big here! Even if you don't feel fully prepared to do it, sometimes you just gotta jump in! Things tend to fall into place when there's a will. List the actions you will take:

1

2

3

4



TEMPLATE LETTER FOR A DAYCARE FACILITY

Use this as inspiration – a starting point. Modify as needed. Writing on behalf of a group of parents from the school can be more powerful if you get negative feedback from your first attempt.

Dear NAME,

I/We have been learning about the damaging health effects of toxic chemicals hiding in our everyday cleaning products. Babies and young children, whose brains and bodies are developing, are the most vulnerable to these toxins, such as 1-4 dioxane (suspected carcinogen), toluene (neurotoxicant), and phthalates (endocrine disrupters). Exposures in early development can lead to respiratory problems such as asthma, neurological problems, hormonal issues, and even cancers.

I am/We are shocked to learn that most of us are blissfully unaware of these dangers. Many cleaning products today are much harsher than when I was/we were in daycare myself/ourselves 30 years ago! In light of this information, a lot of daycares and schools across the United States have been switching to cleaning products that are safer for children. Would you consider switching your cleaning products to green-certified ones? The Environmental Working Group has a helpful Guide to Healthy Cleaners. You can use it to find green-certified products that are safer for our children.

It would give me/us – and all the other parents at DAYCARE NAME! - peace of mind knowing that YOUR CHILD'S NAME and her/his/their friends are not exposed to harmful chemicals at your daycare.

Thanks for listening to my/our concern and many thanks in advance for taking action on this issue!

Warmly,

NAME

NOTE:
Access your Template Letter on Google Drive here.

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CHAPTER 5

SAFE & COMMON INGREDIENTS FOR HOMEMADE CLEANERS

Effective homemade cleaners can be made with ingredients that are cheap, safe, and widely available. Some of the ingredients on our list are plant-based ferments (including a DIY version), others are fruits, plant extracts, left-over plant materials that would otherwise be discarded, basic soaps, and simple industrially-produced products that are non-toxic to the environment.

For each ingredient, we will review how it is produced, its properties, any limitations it might have in terms of cleaning, safety precautions you may need to take when handling it, storage instructions, tips on where or which kind to purchase, and in some cases, how to make the product yourself.

Some of these ingredients will be more "eco-friendly" than others. Cleaning consciously means being aware of the resources it takes to produce your cleaning products like the production methods, required transportation, and packaging, and then making the best decision you can, based on your situation. Local and unpackaged options are always best in terms of their carbon footprint: local organic lemons, foraged saponin-rich plants, homemade kombucha vinegar, repurposed wood ash or coffee grounds will have zero or close to zero impact. Of course, unless you have a lot of time on your hands, you might want to go for the convenient options that can be store-bought! Remember, baking soda and washing soda are products that do not harm the environment when they end up in our waterways. However, their production does involve mining, which can disturb local habitats. Other than the zero-impact options I listed above, no ingredient is going to be perfect. But as compared to their destructive toxic industrial counterparts, their impact is almost negligible.

White Vinegar

Profile:

White vinegar is a cheap miracle product that is very popular in the world of cleaning because of its versatility! It can go by the names of "distilled vinegar', 'white vinegar', 'distilled white vinegar' or 'spirit vinegar'.

It is a widely available fermented clear liquid made up of water and acetic acid. Depending on where you live, this biodegradable ferment can be made from corn (USA), malt (England), beetroot alcohol or wheat (France). In the United States, it is typically diluted to a 5% acetic acid solution, whereas in France it's sold at 8% acidity. The French solution is more effective at cleaning, but the 5% solution will also clean well.

Vinegar's Properties:

- acidic
- degreases
- makes glass shine
- neutralizes odors (acidity breaks down odor molecules)
- fights limescale (oxidizes limescale + dissolves calcium)
- antiseptic, antiparasitic, antifungal
- softens linens + revives colors in clothes
- makes metals shine

Cleaning tip:

When vinegar is heated, it becomes more potent. Vinegar heated to 150°F is as effective as bleach in treating Listeria, E. Coli, and Salmonella (Colorado State U. study)(1).

Limitations:

- Do NOT use vinegar on marble, limestone, or varnished surfaces. The acidity will ruin these surfaces.
- Do not mix Castile soap with vinegar. It will curdle and lose its cleaning value.

Safety Precautions:

- Do NOT mix vinegar with bleach or with sodium percarbonate: it will result in a toxic reaction!
- Do NOT use 14% acetic acid vinegar: classified as dangerous in the EU. If this vinegar is heated, do NOT breathe it in.

Purchasing tips:

White vinegar can be found in many grocery stores in glass packaging and on tap at certain zero waste stores or bulk food stores. In the United States, you'll find it in a 5% acetic acid concentration. In France, vinegar is sold at 8%, 12%, and 14% acetic acid. Do NOT purchase 14% vinegar because it is considered unsafe for the purposes of household cleaning. To effectively remove limescale, 8% acetic acid will be your best bet.

Vinegars marketed specifically as "cleaning vinegars" may have been mixed with petroleum-based synthetic fragrances. These substances should not be used on surfaces used to prepare food. Further, because fragrances are trade secrets, manufacturers are not required to disclose potentially toxic ingredients.

"Cleaning vinegars" or "cooking vinegars" with no additional ingredients added can both be used for cleaning, the only difference being that cooking vinegar will be purer. This difference in purity is not important for cleaning purposes. In this case, the cheapest option is best!

DIY:

It is possible to easily make your own homemade vinegar. A simple alternative is to make your own kombucha beverage and let it turn to vinegar. To learn how to make homemade kombucha, read our blog post here. You won't necessarily know the percentage of acetic acid unless you are equipped to measure it, but this acetic acid will still have cleaning properties. Test your batch of kombucha vinegar to see how well it degreases and neutralizes odors.

Examples of Uses for Vinegar:

- Window cleaning
- Boil vinegar to neutralize odors
- Clean showerheads
- Wash toilet bowls
- Sanitize surfaces

(1) "Inactivation of Listeria monocytogenes, Escherichia coli O157:H7, and Salmonella typhimurium with compounds available in households.", J Food Prot. 2009 Jun;72(6):1201-8., accessed July 2018, URL: https://www.ncbi.nlm.nih.gov/pubmed/19610330

Baking Soda (Sodium Bicarbonate)

Profile:

Baking soda is a white powder that has a seemingly endless amount of uses for cleaning purposes. It is created in one of two ways. The original process to make baking soda includes mining trona (a form of soda ash) from salt lakes in Wyoming, Turkey, and several European and African countries. That process still exists and is in wide use in the United States. Since then, the Solvay synthetic process was developed and is used in much of the rest of the world. It makes sodium carbonate from salt and chalk as the first step in making baking soda.

The bad news is that the synthetic process is energy-intensive and creates toxic wastewater in the process. The trona mining process isn't free of environmental harm either: it does require energy (albeit much less than the synthetic process), emits volatile organic compounds, nitrogen oxides, and methane, and disturbs local natural habitats. In Wyoming, it harms the habitat of the sage grouse, and in Tanzania, it damages flamingo habitat.

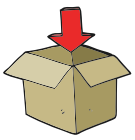
So, why did baking soda make the cut? There is no shortage of trona in the United States: it is an abundant resource. If you are purchasing your baking soda in the US, there's a very good chance it was not made synthetically. Additionally, it is not toxic to the environment when it is released into the waterways, nor is it damaging to human health. As compared to other industrially-produced cleaning products, it isn't nearly as destructive. Whenever there are eco-friendlier alternatives to baking soda for our recipes and tricks, they will be pointed out.

Baking Soda's Properties:

- alkaline (bacteria & fungus die in contact with it)
- deodorizes (by neutralizing acids; destroys odor-causing agents)
- soft abrasive
- fights limescale & softens water
- stain remover
- degreases
- fights mold
- shines & polishes surfaces

Limitations:

- Do NOT use baking soda on aluminum to avoid staining.
- Do NOT treat wool and silk with baking to avoid ruined fibers.
- Do NOT pre-mix baking soda with vinegar: the solution will become neutral within seconds. When you mix baking soda with vinegar, the acetic acid in the vinegar reacts with the sodium bicarbonate. It forms sodium acetate and carbonic acid. The carbonic acid quickly turns to carbon dioxide, which is why the mixture creates bubbles. Once that reaction occurs (within seconds), all that's left is a dilute sodium acetate solution, which has no cleaning value.



Storage:

Baking soda should NOT be stored in metal containers or in non food-grade plastic. If it came with packaging, keep it in its original container. If you purchased it in bulk, a glass container would be fine.

Do not store baking soda in the refrigerator. Keep it in a sealed container, in dry conditions, out of the sunlight.

Baking soda can become inactive if the package isn't sealed properly. If it isn't protected from humidity, baking soda may either solidify or become cakey. To determine whether baking soda is still active, mix 1 part of baking soda with 4 parts of vinegar. If you don't see bubbles, then the baking soda has lost its effectiveness.

Purchasing tips:

Based on where you are located, baking soda (sodium bicarbonate) will be available in different quantities and qualities. You may find it unpackaged in bulk at a zero waste store. If not, your next best option is in cardboard packaging. In the United States, you can look for baking soda (i.e. Arm & Hammer brand) in your grocery store near or in the cleaning product aisles. It will be sold in large quantities for very cheap and the grains are an ideal size for cleaning purposes. In the event that baking soda is not available in this store section, you may only have baking soda for cooking available to you. It will be sold in small quantities in the baking aisle, won't be as cheap, and the grains will be finer. (Do not confuse with baking powder, which is slightly different.) This baking soda for cooking will be purer, but the difference in purity is insignificant, especially for cleaning purposes. If your purchase is outside of the United States, remember that the baking soda is likely produced through the more damaging synthetic method.

Examples of Uses for Baking Soda:

- Deodorize hamper or car
- Scour a burnt bar
- Clean oven
- Maintain washing machine
- Laundry cleaner
- Polish silverware

Washing Soda (sodium carbonate)

Profile:

Washing soda (sodium carbonate) comes in a white powder form or sometimes in small white pellets. Depending on where you live, it may also go by the common names of soda crystals or soda ash. Washing soda (in the form of trona) is a necessary ingredient in the production of baking soda: the washing soda is first dissolved in water, then treated with carbon dioxide. Just like baking soda, washing soda is produced by mining for trona or by artificial creation through the Solvay synthetic process (from chalk, salt, and ammonia). As discussed above, the resulting product is non-toxic for the environment, but it does involve a certain amount of habitat disturbance (mining) or chemical pollution (Solvay method).

Washing Soda Properties:

- very alkaline (pH 11)
- degreases
- dissolves acids
- removes stains (grease, blood, ink, tea, coffee)
- fights limescale
- fights burn-marks
- unclogs plumbing

Limitations:

- Do NOT use on aluminum cookware (alkalinity will stain aluminum).
- Do NOT use on wood, varnished surfaces, or ceramic cooktops.
- NOT for washing wool or delicate clothing.

Safety:

- Do NOT mix washing soda with acidic substances (i.e. vinegar): dangerous reaction.
- Do NOT confuse washing soda with caustic soda (lye). Caustic soda requires careful handling and can cause chemical burns.
- While washing soda is not toxic, it is a strong skin irritant. Always wear protective gloves when handling it. Failing to wear gloves can cause dermal sensitivities such as dry skin or worse.
- Make sure not to get washing soda in your eyes. If you do, rinse them thoroughly with water immediately and contact your care provider.

Purchasing tips:

There are 2 main types of washing soda on the market. Some companies add water to the washing soda, which causes it to crystallize (hence the term soda crystals). Others leave the washing soda in its pure form – if you purchase it in this form, you'll only need 1/3rd of the recommended amount. Check the label to be sure which kind you are purchasing. Washing soda is sometimes available unpackaged, in bulk. In the United States, you can look for Arm & Hammer washing soda, which is widely available and cheap.

DIY

If you can't get your hands on any, you can make your own washing soda by using baking soda and putting it in the oven. Baking soda melts to washing soda starting at 50 degrees celsius. While we have not experimented with this ourselves, Wellness Mama has a helpful blog post about it here.

Examples of Uses for Washing Soda:

- Laundry machine maintenance (prevents lime build-up)
- Laundry booster (good for hard water, keeps clothes white)
- Plumbing maintenance

What is soap?

Saponification is the process that creates soap, and it's typically from mixing lye (sodium hydroxide or potassium hydroxide) and fats together. These fats can come from different types of vegetable oils or animal fat. Depending on the type of fats you decide to add in your soap, it will create a different soap – maybe a softer soap, a silkier soap, a stable lather or a fluffy lather. Lye, on it's own is dangerous – it shouldn't touch your skin and you should use eye protection if you are handling it. When lye goes through the process of saponification (when it's mixed with fats from oils to create soap), its chemical composition changes. No lye is left in the finished commercial product, so it is safe for use.

The production of vegetable oils and animal fats (to a lesser extent) can be done with a relatively low carbon footprint, especially if produced on a small scale. Lye production, however, has a negative environmental impact. When sodium hydroxide is produced industrially, it is made through the chloralkali process. This process is energy-intensive and depending on the specific method used can result in serious mercury contamination in our waterways. The chloralkali process is also used to produce potassium hydroxide (caustic potash) instead of sodium hydroxide to create a softer, liquid soap.

A more eco-friendly way to produce potassium hydroxide is by making it at home by using wood ash. Remember that lye is a highly dangerous substance that must be produced, handled and stored with the utmost care. If you would like to make your own potassium hydroxide, it is possible to do so with hardwood ashes and soft water. This homemade lye will create soft liquid soaps.

Tip: Soap you purchase for cleaning should be unscented and free of palm oil. (Palm oil is responsible for severe orangutan habitat destruction.)

Marseille Soap

Profile:

Marseille soap is made from a recipe that originally comes from Marseille, France. Traditionally, it's a mixture of sodium hydroxide and vegetable oils (72% olive oil). It's a hypoallergenic soap that doesn't cause skin irritations or allergies. Its green color (light or dark green) is based on the type of olives that are used to make the soap.

Marseille Soap Properties:

- fantastic stain remover (even removes rug stains & stains on tile)
- gentle on delicate linens and wool
- cleans surfaces
- antiseptic & antimicrobial
- maintenance of stone and marble surfaces

Fun fact: Marseille soap doesn't lather all that much. But a lack of bubbles don't mean it isn't cleaning – only that certain oils (like palm oil, coconut oil) weren't added.

Purchasing tips:

If you live in Europe, Marseille soap will be easy to come by in regular grocery stores. Make sure it is 72% olive oil, unscented, and that no coloring nor animal fat ("tallowate") was added. It usually comes packaged in plastic, but there are cardboard options as well. If you live in the United States, look for unscented Castile bar soap instead which is similar to Marseille soap. It should be free of palm oil.

Examples of Uses for Marseille Soap:

- Laundry powder
- Clean rug stain
- Sanitize marble table

Castile Bar Soap

Profile:

Castile Bar soap is a white soap made from olive oil and sodium hydroxide with a pH of 8.9. This biodegradable soap is inspired by a recipe originally from the Castile region of Spain. Like Marseille soap, it does not contain any animal fat. However, the oils it uses can vary. They can include coconut oil (which adds lather), hemp oil, avocado oil, and almond oil.

Castile bar soap Properties:

- degreases
- gentle on delicate linens and wool
- cleans surfaces
- antiseptic & disinfectant
- maintenance of stone and marble surfaces

Purchasing tips:

Castile soap should be unscented, with no animal fats and no palm oil added: Mountain Naturals Soap fits this criteria, and Fillaree offers similar options. If there are any ingredients other than saponified lye and vegetable oils, be wary.

Tip: Castile soap and Marseille soap can generally be used interchangeably. Aleppo soap, made from lye, olive oil and laurel oil, is also a wonderful alternative to Castile soap.

Limitations:

Do not mix Castile soap with vinegar. It will curdle and lose its cleaning value.

Examples of Uses for Castile Soap:

- Dishwashing soap recipe
- Laundry powder

Liquid Castile Soap

Unlike Castile bar soap, liquid Castile soap is produced with potassium hydroxide, which makes it a softer liquid soap. This potent yet gentle soap works well for household cleaning purposes.

Purchasing tips:

Look for palm-oil free options. Aromatics International offers this in a glass bottle, although it comes in bubble wrap. Fillaree offers similar suds soaps that you can refill.

Limitations:

Do not mix Castile soap with vinegar. It will curdle and lose its cleaning value.

Examples of Uses for Castile Soap:

- Dishwashing soap recipe
- Scouring paste

Lemons

Profile:

Lemons are of course the sour fruit native to Asia. Because of lemon juice's pH of around 2.2 and its fresh aroma, it has many useful cleaning properties. Lemon rinds, lemon quarters, and lemon juice can all be used for cleaning.

Lemon Properties:

- high citric acid content (about 6%)
- effective as disinfecting
- abrasive
- fights limescale
- deodorizes
- removes stains + whitens clothes
- makes things shiny (oxidized jewelry)

Green tip: If you have the budget, look for local organic lemons to minimize the environmental impact.

Examples of Uses for Lemons:

- sanitize sponges
- scouring paste
- deodorize cutting board
- decalcify ironing board

Citric Acid

Profile:

Citric acid is present naturally in lemons. To produce it industrially, the Aspergillus niger fungus is fed a cheap sugary solution (sugar cane molasses, corn steep liquor, or hydrolyzed corn starch) to produce citric acid. To isolate & produce the final citric acid product, calcium hydroxide (1) and sulfuric acid (2) are both needed. While the end product is non-toxic and biodegradable, its production does have an environmental impact.

(1) Production of calcium hydroxide requires calcium oxide from limestone or seashells. Limestone production requires mining. When mining for limestone, groundwater is often polluted, sink holes can form, habitat is destroyed, and local air is often polluted with dust.

(2) The production of sulfuric acid requires sulfur and oxygen. To produce sulfur nowadays, petroleum, natural gas or other fossil resources are necessary. To produce oxygen industrially also requires energy.

Industrially produced citric acid is not perfect, but as compared to its toxic cleaning counterparts, its impact is smaller. In this conscious cleaning book, we encourage you to start asking questions about how things are produced and what impact they might have on the environment. By being aware, you are making an informed decision and can choose the least harmful option based on your situation.

Citric Acid Properties:

- fights limescale (decalcify)
- antibacterial

Limitations:

Do NOT use citric acid on enamel, aluminum or marble.

Safety:

- Do NOT mix citric acid with washing soda, sodium percarbonate or bleach.
- Wear protective glove and protect your skin since it's very acidic. Exposure to skin may result in redness or pain.
- Avoid inhaling it, especially if you have a sensitive respiratory system. Inhaling citric acid can cause shortness of breath, coughing or a sore throat.
- Do NOT ingest! Because of its acidity, ingestion is toxic but not deadly.

Purchasing tips:

The bulk section of certain health food stores carries citric acid iunpackaged. It tends to be cheaper than when sold in small plastic bottles.

Examples of Uses for Citric Acid:

- Toilet bowl cleaner
- Dishwasher powder
- Clean burnt pot

Salt

Profile:

Salt is a nontoxic biodegradable cleaning agent that you likely have on hand at home. It can be produced by evaporating saltwater or by extracting sedimentary deposits. Sea salt production is typically a lower-energy operation since it relies on natural evaporation. However, large-scale operations can disrupt local habitat and sometimes harm local marine wildlife. Table salt is produced by extracting brine from underground salt deposits. While there isn't much pollution associated to the extraction itself, the brine evaporation process is energy-intensive. Both table salt and sea salt require transportation and packaging. The lower impact choice is likely sea salt, but both choices are relatively responsible as compared to destructive cleaning product alternatives.

Salt Properties:

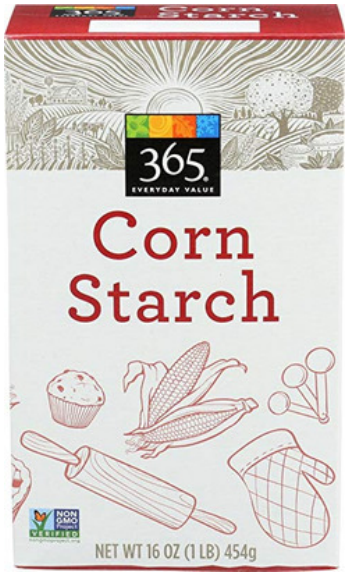
- absorbs moisture
- acts on liquid stains
- abrasive

Examples of Uses for Salt:

- Clean the grill
- Wine stain removal
- Remove rust stain
- Make copper shine

Cornstarch

Profile:



Cornstarch is a white starch powder that is derived from the corn grain or wheat. To produce it, corn is lightly fermented and the starch is then separated through repetitive washing. This process is low-energy and doesn't cause significant pollution. The final product is nontoxic and biodegradable.

Cornstarch Properties:

- deodorizer
- wonderful absorptive properties
- treats stains on dry textiles like leather and suede

Purchasing tips:

Find citric acid in bulk in zero waste stores. Alternatively, Rumford sells this in a recycable tin box with a plastic lid. Or 365 sells it in cardboard packaging.

Examples of Uses for Cornstarch:

- Grease stain on couch
- Toilet fizzies

Essential oils

Profile:

Essential oils are extracts of aromatic plants that can be wonderful cleaning agents. The oils are extracted through steam distillation or through cold pressing. Producing these oils is resource-intensive: for example, 50 to 60 roses are necessary to produce just 1 drop of rose essential oil. Because it requires so much plant material to produce the oils, it is important to purchase from companies that support sustainable farming practices. Some companies, such as Aromatics International, provide oils that are certified organic. When used with care with our safety guidelines, the oils are safe for cleaning purposes. If the oils need to be discarded for any reason, those which are flammable or toxic to aquatic life may need to be treated as hazardous waste.

Essential Oil Properties:

Essential oils have a variety of properties that depend on the type of plant they are extracted from.

Essential oils may:

- deodorize
- disinfect (antiseptic, antimicrobial or antifungal)
- fight mold
- energizing aroma
- fight aphids

Limitations:

- Dilute essential oils in a carrier base to protect wood, plastic or marble furniture.
- It's best practice to rinse all surfaces treated with essential oils with water.

Safety:

- Always mix the oils prior to use! To add them to a liquid mixture, use 20+ drops of essential oils for 7oz of liquid (like vinegar and water).
- Wear gloves to avoid dermal sensitivities.
- Do not overuse: they emit volatile organic compounds that can irritate your lungs.
- Aerate the room/home after use.
- Many oils are not suitable for pets and small children, either.

Storage

Living in North Carolina weather, I'm accustomed to storing my essential oils in the refrigerator. It would typically be much too hot in the house most of the year for the oils: excessive heat causes changes in their chemical composition. However, essential oils can be stored between 45-65 degrees Fahrenheit, with 65 degrees Fahrenheit being the ideal temperature. Make sure they are kept out of the sunlight in airtight glass containers.

Most oils can keep for 3 to 5 years from their date of distillation, or even more, while citrus keeps only 1 to 2 years. If it's gone bad, it may be hard to tell – it might appear dark and viscous, but it's best to check the expiration date, or better yet, the date of distillation.

Purchasing tips:

In the United States, there is unfortunately no labeling regulation for essential oils. Many oils may have been diluted down with other oils or may have synthetics added to them. The cheaper they are, the more likely it is they aren't pure essential oils. If you're located in the United States, we recommend opting for brands that have sustainable farming practices and GC/MS purity testing such as Aromatics International. Note that their packaging isn't plastic-free.

Selecting Essential Oils for Cleaning Purposes:

- … for general disinfecting: Lavender + geranium + lemon + orange + rosemary + thyme + peppermint
- … for potent disinfecting + to fight mold: Tea tree + eucalyptus + clove + cinnamon
- … for an energizing aroma: Tea tree + lemon + bergamot + grapefruit + lime + mandarin
- … for a fresh clean scent: Lavender + mint + Scots pine + eucalyptus
- … to fight aphids: Tea tree + lemongrass + eucalyptus + cinnamon + clove
- … to fight insects: Rose geranium + lemongrass + eucalyptus + pennyroyal
- … to repel ants: Peppermint + cinnamon + cayenne
- … to repel moths: Cedar

EXAMPLES OF USES FOR ESSENTIAL OILS:

Essential oils have a variety of properties that depend on the type of plant they are extracted from.

by Permacrafters

1. **LAVENDER + GERANIUM + LEMON + ORANGE + ROSEMARY + THYME + PEPPERMINT**

   general disinfecting

2. **TEA TREE + EUCALYPTUS + CLOVE + CINNAMON**

   potent disinfecting + fight mold

3. **TEA TREE + LEMON + BERGAMOT + GRAPEFRUIT + LIME + MANDARIN**

   energizing aroma

4. **LAVENDER + MINT + SCOTS PINE + EUCALYPTUS**

   fresh clean scent

5. **TEA TREE OIL + LEMONGRASS + EUCALYPTUS + CINNAMON + CLOVE**

   fight aphids

6. **ROSE GERANIUM + LEMONGRASS + EUCALYPTUS + PENNYROYAL**

   fight insects

7. **PEPPERMINT + CINNAMON + CAYENNE**

   fight ants

8. **CEDAR**

   repels moths

Hardwood Ash

Profile:

Oaks, chestnuts, fruit trees, and acacias have high potash content. Potash, which is potassium carbonate, is an ingredient sometimes used in soap production. It can be found in the wood ash of these hardwood trees and used for cleaning purposes. The environmental impact of using these trees for soap making is close to zero, so long as you are repurposing ash that otherwise would have been discarded. Consider using hardwood ash from your chimney or a fire pit to make laundry soap.

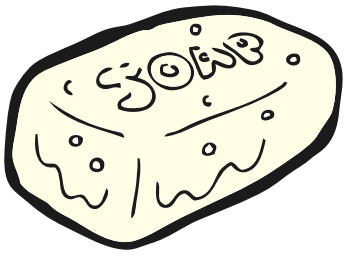
Potash from hardwood ash properties:

- dissolves grease
- acts on stains
- gentle for cleaning clothes
- absorptive

Safety

Use gloves when handling the ash. It must be fully cooled prior to collecting it! It can be surprisingly hot even the day following a fire. Do NOT store ash liquid in glass - it will erode the glass and burst!

Examples of Uses for Wood Ash:



- Homemade Laundry Cleaner
- Polish Silverware
- Remove paint stains
- Make homemade soap: Mix the ash in water, then add vegetable oils or animal fat to make soap. The mixture will get cloudy and may harden.

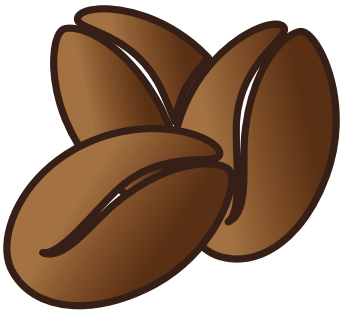
Coffee grounds

Profile:

Coffee grounds are the used coffee grains leftover from brewing coffee. If you're an avid coffee drinker, this is the perfect occasion to put your coffee grounds "waste" to good use. And if you're looking to test out cleaning with coffee grounds but don't like coffee (I'm right there with ya!), coffee shops give out coffee grounds for free for your composting, mushroom-growing or cleaning needs! Using used coffee grounds that would otherwise be discarded has zero environmental impact and is a perfect way to get resourceful to clean your home.

Coffee grounds properties:

- deodorizer
- abrasive
- absorptive



Examples of Uses for Coffee:

- Neutralize odors in fridge
- Use on smelly hands after preparing fish
- Scouring paste
- Clean chimney ash without making a dust cloud

Saponin-rich plants

Certain plants are rich in saponin, which is a natural detergent and foaming substance effective as lifting grease, dirt, and grime from clothing. The more saponin a plant has, the better it will clean. Plants that have high saponin content include soap nuts (Sapindus Mukorossi), alfalfa, horse chestnut, English ivy, common soapwart (Saponaria officinalis), soapweed yucca, California soaproot, Buffaloberry, soap bark tree, and quinoa. In the case of most of these plants, their cleaning properties can be extracted through a decoction process and the remaining liquid can be used as laundry detergent or soap.

When local plants are harvested responsibly, this cleaning method has zero or close to zero impact on the environment. If the plants are being shipped from far away, like in the case of soap nuts, the production method (sustainable, respectful of local businesses), shipping, packaging, and disposal methods need to be factored in. However, as compared to other laundry detergents on the market, soap nuts have a relatively low carbon footprint.

Soap nuts (Sapindus Mukorossi)

Profile:

If you've heard of cleaning with saponin-rich plants, you've most likely heard of soap nuts (or soap berries), which you can purchase online and in specialty stores. The Sapindus Mukorossi's fruit shell contains high concentrations of saponin in it, which is why it's used as laundry soap. Note that unless you live in the foothills of the Himalaya, the soap nuts have to travel quite a ways to get to you. Still, their environmental impact is small as compared to commercial laundry detergent equivalents. The nuts are nontoxic, reusable, and compostable.

Soap Nuts Properties:

- surfactant
- lifts grease, dirt and grime
- fabric softener

Limitations:

We like using soap nuts to clean our laundry. Still, these soap nuts do have their limitations: in our experience, they aren't ideal for very dirty laundry. If you're dealing with a pile of filthy clothes, we recommend using these soap nuts in conjunction with baking soda (or sodium percarbonate if you're washing whites).

Purchasing tips:

Purchase from companies that are certified organic and that avoid plastic packaging.

Examples of Uses for Soap Nuts:

5 nuts in a cotton bag to wash the laundry with
Fabric softener for laundry
Make clothes soft & fluffy in dryer

Thirsty to learn more about cleaning with saponin-rich plants? Discover our guide to cleaning with these plants below.

Guide to Cleaning with 10 Saponin-Rich Plants

Natural Cleaning Agents in your Backyard: Potash and Saponin:

Plants have useful cleaning properties when they contain a high concentration of potash or saponin.

POTASH

Potash, which is potassium carbonate, is an ingredient sometimes used in soap production. It's effective at dissolving grease and acting on stains. Trees that have high potash content include oaks, chestnuts, fruit trees and acacias. The best way to make use of the potash is to collect the wood ash from these trees, mix the ash in water and filter it to use the liquid as your cleaning solution. (Note that we encourage you to salvage wood ash as opposed to actively cutting down and burning trees in order to wash your clothes...!)

SAPONIN

Saponin is also an effective cleaning agent. It's a natural detergent and foaming substance that is effective at lifting grease, dirt, and grime from clothing. The more saponin a plant has, the better it will clean. Plants that have high saponin content include soap nuts (Sapindus Mukorossi), alfalfa, horse chestnut, English ivy, soapweed (Saponaria officinalis), and quinoa. Their cleaning properties can be extracted through a decoction process and the remaining liquid can be used as your laundry detergent.

10 Saponin-Rich Plants for Cleaning:

1. Soap Nuts *(Sapindus Mukorossi)*

If you've heard of cleaning with saponin-rich plants, you've most likely heard of soap nuts (or soap berries), which you can purchase online and in specialty stores. The Sapindus Mukorossi's fruit shell contains high concentrations of saponin in it. All it takes is putting 5 of these nuts in a small cotton bag and putting it in with your load of clothes in the washing machine. Your laundry will come out smelling fresh and clean. The dried fruits also act as a fabric softener and can be used in the dryer to soften clothes. These nuts do have their limitations: in our experience, they aren't ideal for very dirty laundry. If you're dealing with a pile of filthy clothes, we recommend using these soap nuts in conjunction with baking soda (or sodium percarbonate if you're washing whites). Note that unless you live in the foothills of the Himalaya, the soap nuts have to travel quite a ways to get to you.

2. Quinoa *(Chenopodium quinoa)*

The seeds of quinoa are naturally rich in saponin. When you rub the seeds in water, they release the saponin and the water becomes frothy. Don't get too excited though. The quinoa you buy at the supermarket has already had its saponin coating removed in order for it to be edible and not taste bitter or soapy. If you want to use quinoa's saponin, you would have to harvest the ripe seeds directly at the source. After rubbing the seeds in water, you would keep the seeds for cooking purposesand use the frothy liquid as laundry cleaner or even shampoo. Is quinoa not native where you live? If you live in the United States or Canada, consider foraging for amaranth, which is a noxious weed in those countries. Its saponin content is lower than that of quinoa, but it might be worth a try. (If you test it out, let us know what the verdict is!)

3. Horse Chestnut

Horse chestnuts are also high in saponin. In order to release the saponin, however, it will take a bit of work. First, you'll want to go foraging for your chestnuts: at least 4 cups is a good starting place in order to have some nuts left over. Break them into chunks by putting them under a towel and hitting them with a hammer. Transfer them to your food processor to make the pieces even smaller. Take 3.5 tbsp of chestnut pieces in a large bowl or pot and add 2/3 cup of hot water (the ratio being 1:2 in volume). Let the chestnut pieces leech out their saponin for about an hour. The resulting liquid will be milky and foamy.The recipe makes enough for 2 loads of laundry: use about 1/3 cup of per laundry load.

The reason to not make it in larger quantities is that the liquid only keeps for one week in the fridge. This is why you want to dehydrate the remaining chestnut pieces and store them. When you need to wash your clothes, make a new batch of chestnut soap milk! This process is time-intensive at the very start, but once you have your small chestnut pieces on hand, it's not all that difficult to make your laundry soap for the week. Note that like other detergents listed here, horse chestnuts are ideal for delicate clothing and not meant for tough stains or filthy clothes.

4. English Ivy

If you live in Europe, western Asia or the United States, you'll likely find the English ivy vine growing on a tree in the forest or covering the walls of a house in your neighborhood. English ivy is invasive in the United States and is classified as a noxious weed. Its leaves are rich in saponin. To extract it, make a decoction and use the liquid as your laundry detergent. Detailed instructions can be found in our blog post here.

Detailed instructions can be found in our blog post here.

5. Soapweed Yucca

Soapweed yucca grows natively in the prairies and grasslands of the United States. Its roots are rich in saponin and can be gathered year-round. (Before you go digging, check your local laws to make sure you can legally do so.) To make your laundry detergent (or shampoo!), dig up its root, chop it into large chunks and take off the outermost root skin. Cut it into smaller pieces and blend it into a pulp. Dehydrate or freeze what you don't need immediately. To make your laundry detergent, grab a handful of the pulp and mix it forcefully in 2-3 cups of warm water. The water will lather and you can strain it through cheesecloth to collect your laundry liquid. Use about 1/3 cup per laundry load. The mix will keep for about a week in the fridge.

6. Common Soapwart *(Saponaria officinalis)*

Common soapwart also goes by the name of soapweed, but should not be confused with soapweed Yucca. It can be found in the United States, Europe and Asia. Its saponin is mostly concentrated in its roots. In order to make laundry detergent from it, you'll want to dig up its roots, and potentially cut its leaves as well. Cut these into large pieces and put them into a large pot of water. Simmer for at least a couple hours, up to 6. Let the mixture cool for about 12 hours before removing the roots and leaves and straining the foamy liquid. As with the English ivy recipe, adding vinegar will extend its shelf life. Use 1/3 cup per laundry load.

7. California Soaproot *(Chlorogalum pomeridianum)*

California soaproot is native to the West Coast of the United States. The bulb from which it grows is rich in saponin. The saponin can be extracted through a decoction.

8. Buffaloberry *(Elaeagnaceae Shepherdia, Spp.)*

Buffaloberry (or soapberry) is native to North America. The raw berries are high in saponin: when they are beaten, they froth. The plant is used commercially as a foam producer. To extract the saponin, steep the berries and swish them around vigorously.

9. The Soap Bark Tree *(Quillaja saponaria)*

The soap bark tree is native to Chile. Its bark has a high concentration of saponins. In order to extract the saponin, the bark of the tree is turned into a powder and mixed in water. The lathery liquid can be used as laundry detergent.

10. Alfalfa *(Medicago sativa)*

Alfalfa is a plant that originated in south-central Asia and is also high in saponins. Its foliage is particularly high in it in the summer months. It can be extracted through a decoction process.

Bonus: Oats and soy are also high in saponin.
If you're feeling crazy, give these a try as well!

CHAPTER 5A BONUS: 8 WAYS TO USE SOAP NUTS FOR CLEANING

If your goal is green cleaning your entire house with just soap nuts, you'll want to learn different ways to prepare these fruits for your zero waste cleaning routine:

1. You can use the soap nuts WHOLE, as when cleaning your clothes.
2. You can make a soap nut LIQUID by boiling 20 soap nuts with 4 cups of water and straining the liquid. This liquid requires refrigeration and keeps for one week.
3. You can make a soap nut PASTE by boiling soap nuts and then grinding them in the food processor.
4. You can make a soap nut POWDER by grinding soap nuts finely.

Note of caution: Never ingest soap nuts or get them in your eyes. Always label appropriately and keep out of the reach of children and pets.

These 4 soap nut preparation methods are all you need to start sanitizing everything from your tub to your jewelry!

1. How to Use Soap Nuts as Laundry Cleaner

Soap nuts are typically sold as laundry-cleaning agents. You take 4-5 nuts, place them in a cotton bag, and toss them in with your laundry. While they are effective zero waste cleaning agents, they aren't ideal for filthy stained clothes or cloth diapers.

If you're washing whites, we recommend adding 1 tbsp. sodium percarbonate per load. If you would like to add a nice scent to your laundry, we recommend adding essential oils such as lavender.

2. How to Use Soap Nuts as Fabric Softener

When using soap nuts to clean or dry your clothes, there's no need for a fabric softener. Soap nuts naturally soften clothes both in the wash and in the dryer. They help make clothes soft and fluffy. As soon as you're done with your soap nuts in the wash, throw them in the dryer next.

3. How to Use Soap Nuts as Multi-Purpose Cleaner

Soap nut liquid can be used as a multi-purpose cleaning agent. It can be used in a spray bottle to sanitize kitchen surfaces. You can add it to your toilet cleaner bottle to clean your toilet bowl. This liquid can also be used to clean your floors. It will clean most surfaces, so get creative!

4. How to Use Soap Nuts as a Grime Scrubber

Soap nut paste can be used as a scouring paste to scrub bathtubs, windows full of soot, or oven doors. Simply grab a homemade tawashi sponge or a luffa sponge to start scrubbing! You might need some elbow grease, too.

5. How to Use Soap Nuts as a Window Cleaner

Soap nut liquid can be added to a spray bottle and sprayed on your windows or on glass to make windows squeaky clean. Using newspaper to clean your windows is an effective way to minimize streaks. Since soap nuts don't create excessive suds, they work really great as window cleaners.

6. How to Use Soap Nuts for Cleaning Dishes

The soap nut liquid can be used to clean your dishes, but it would need to be stored in the fridge or mixed with ingredients that would help the soap last longer (such as vegetable glycerin and Castile soap). Alternatively, you can use soap nut powder to make dishwasher soap. You would use citric acid, washing soda, and soap nut powder in equal volumes.

7. How to Use Soap Nuts for Steam Cleaning Carpets

Soap nuts are excellent carpet cleaners. Using the liquid in a portable cleaner, for instance, will not only clean the carpet but also cut bad odors. If you're cleaning your carpet by hand, make sure to aerate afterwards to dry appropriately.

8. How to Use Soap Nuts to Clean Jewelry

Jewelry that needs reviving can be soaked in soap nut liquid, then scrubbed with a soft brush. This also applies to kitchen metals that have lost their shine. We were really impressed with this soap nuts recipe!

CHAPTER 5B BONUS: HORSE CHESTNUT LAUNDRY DETERGENT

Horse chestnuts that cover sidewalks and city streets in the late summer and early fall are high in saponin, which is a natural detergent and foaming substance. Saponin is a surfactant that's effective at lifting grease, dirt, and grime from clothing. The higher the saponin content in a plant, the more effective that plant will be at cleaning. In order to release the saponin from the chestnuts, it takes some work, however! But the process is well worth it since the resulting laundry powder is shelf-stable and long-lasting.

Finding horse chestnuts

Horse chestnuts originate from South East Europe, but they can be found across much of Europe, as well as in many cities in the United States and Canada. If you aren't sure where to find horse chestnuts near you, write your local botanical garden or foraging experts for tips. Of course, you'll have to wait until late summer or early fall to find your first horse chestnuts. In my case, in Switzerland, the first horse chestnuts begin falling the second week of September. Not all US cities will readily have them

Identifying horse chestnuts

Horse chestnuts are large, glossy, and smooth brown nuts with a light spot on them. The tree's leaves are palmate, which means they have leaflets that all radiate from one point at the center, arranged like spokes on a wheel. There are 5-7 leaflets per leaf. These horse chestnuts (Aesculus hippocastanum) should not be confused with sweet chestnuts (Castanea sativa), which come from a different family. Unlike sweet chestnuts, horse chestnuts are not edible – in fact, they are toxic when consumed! It's quite simple to tell the two nuts apart. A sweet chestnut will have a very spiny husk that is very sharp. A horse chestnut, on the other hand, has a husk with much fewer spines, and the spines aren't quite so sharp to the touch. The shape of the nut is also a good way to identify them. Sweet chestnuts have a pointy tip at the end of the nut, whereas horse chestnuts are completely smooth.

Horse chestnut toxicity

You may have heard of school kids in England 'playing conkers' by throwing horse chestnuts at each other. Other than the welts that may result in playing that game, simply touching horse chestnuts is considered safe.

Horse chestnuts, however, are toxic and should never be consumed. One more time: DO NOT CONSUME HORSE CHESTNUTS – THEY ARE TOXIC. The esculin and saponin present in the horse chestnuts render them toxic to humans and animals. The horse chestnut laundry powder that you make should be stored away from children and from pets to avoid any accidental ingestion. If ingested, it could cause tremors, vomiting, diarrhea, or worse.

The other safety precaution you'll want to take is to thoroughly wash any kitchen item or surface that came into contact with your horse chestnuts when preparing them.

Making horse chestnut laundry detergent

What attracted us the most to horse chestnuts (among the many other saponin-rich plants!) was how durable the final product is: easy to dehydrate and make as necessary throughout the year.

Materials:

- Horse chestnuts (Aesculus hippocastanum), about 4-5kg (10-11lbs.) – ALWAYS BE 100% CERTAIN OF YOUR PLANT IDENTIFICATION
- Large foraging basket or bag
- Hammer and kitchen towel (OR kitchen knife and cutting board)
- High-power blender (I find these actually work much better than a food processor)

- Large glass jar
- Labeling utensils (i.e. sharpie)
- Nut milk bag or reusable straining cloth reserved to horse chestnuts use only
- 2 smaller glass jars
- Measuring cup
- Cookie sheets

Preparation Time: 1-2 days (time to forage and dehydrate)

Step 1: Making the horse chestnut powder:

1. Go foraging for horse chestnuts in the late summer or early autumn.
2. Wrap a handful of horse chestnuts in your kitchen towel, and whack them hard with a hammer to break them into smaller pieces. Transfer the chunks to your blender. Alternatively, cut into large chunkswith a kitchen knife on your cutting board. Repeat with all nuts.
3. Grind finely in a high-power blender.

4. Place the powder on a cookie sheet and dehydrate either on your car dashboard on a sunny day, in the sun on a hot day, on in your oven on the lowest heat setting. Duration will vary, but count for at least one full day in the sun or 8 hours in the oven. Keep out of children's reach and pet's reach!
5. Transfer horse chestnut powder to a large sealed jar and label it. Store it safely out of the reach of children and pets. This jar of powder will keep indefinitely.
6. Thoroughly clean all utensils, appliances, containers, and surfaces that came in contact with the horse chestnuts.

Step 2: Making the horse chestnut laundry detergent (enough for 2 loads in 1 week):

1. At least 30 minutes prior to starting your laundry, mix 3.5 tbsp. (or ¼ cup) of the powder in a jar and add 2/3 cup of hot water. (The ratio being 1:2 in volume.) Let the chestnut pieces leech out their saponin during this time.
2. Strain the resulting liquid into a second glass jar. This milky and foamy liquid is your horse chestnut laundry detergent. You'll have about ⅔ cup. Use immediately or store in fridge for up to a week.
3. Use about 1/3 cup per laundry load. (You'll have another ⅓ cup left over for one more load. Remember to use the liquid within a week. If you do more than 2 loads of laundry every week, make larger volumes of detergent at once.)
4. Thoroughly clean all utensils, appliances, containers, and surfaces that came in contact with the horse chestnuts.
5. Repeat these steps whenever you need to clean laundry.

CHAPTER 5C BONUS: Unlikely (and Safe) Cleaning Agents

These cleaning ingredients may become handy when you're in a pinch.

Potato

Profile:

Oxalic acid in its pure form is an excellent cleaning agent, but also very dangerous. What's a better way to make use of its properties safely? Use oxalic acid from potatoes! Have you ever used a potato to clean around the house? Your grandparents might have!

- Half a potato: Potatoes contain oxalic acid, which fights rust. Cut a potato in half, rub in on the rusty items, and ta-da! Potato halves can also be used to remove stains from clothing or to remove finger marks from light switches.
- Boiled potato water: Use the potato cooking water to wash your tiles.
- Potato peels: Potato peels can be used to decalcify water boilers and pans.
- Peeled potato: Peeled potatoes can make dishes, silverware and metal objects shine.

Club soda

Club soda is carbonated water with added minerals such as potassium bicarbonate and potassium sulfate. It fights rust and can clean windows and mirrors, porcelain, carpet stains, and windshields.

MYTH OR TRUTH? YOU TELL US!

Banana Skin

Banana skin contains potassium. This skin can purportedly buff leather, reduce scuff marks, and thus serve as shoe shine. You're going to have to test this one out yourselves, y'all. We don't own fancy leather shoes!

Brazil Nuts

Does your old wooden furniture have scratches on it? Rub them with half a Brazil nut to naturally darken the marks… and let us know how it goes because we haven't tried this one! Let us know in the Facebook group if it's a myth or fact.

CHAPTER 5D BONUS: Indoor Air Pollution & Air-Cleaning Houseplants

Our homes are our safe havens – or at least, they should be. It turns out that indoor air pollution is often worse than outdoors, whether in the city or in the countryside, and it could be making us sick. Clean indoor air is something I must admit I took for granted. At the time that we were filming the workshop that accompanies this book, I was living in a nontoxic straw bale and cob home. I had spent the summer building and painting this earthen house with materials from the land with natural builder Greg Allen. So during my time living in that home, I didn't worry for a second about air pollution from harmful building materials, paints, or adhesives. The setting was also spectacular: in the woods, by a farm and pond at the wonderful Eco-Institute in Chapel Hill. It's only when I moved to the city of Basel, Switzerland, surrounded by cars and chemical industries, that I began to get concerned. I've been spending my time working indoors and started feeling sluggish. So, I decided to look more into what pollutants might be making me feel this way and potentially putting my health at risk.

To my surprise, a study by the Environmental Protection Agency (EPA) showed that the air in our homes is much more polluted than outdoors, regardless of whether we live in the countryside or the city. Doctors call "sick building syndrome" unexplained symptoms of fatigue, eye, nose, or throat irritation, headaches, dizziness or nausea associated to spending time indoors. The causes of these symptoms are often attributed to indoor air pollution. There are many reasons the air in our homes can be polluted: cigarette smoke, radon, mold, carbon monoxide, carbon dioxide, volatile organic compounds (VOCs), and more. Among the air pollutants that most commonly pollute our homes are VOCs. They are hiding in the paint on our walls, in our furniture, on our food, and in our everyday products such as our cleaners or cosmetics. Here are a few to be aware of and where to look out for them:

Formaldehyde 

Formaldehyde (a VOC) is a common indoor air pollutant and human carcinogen. Overexposure in the home can cause respiratory irritations. You might ask, how am I being exposed to this cancer-causing agent? It's present in many household products (such as grocery bags, disposable sanitary products, paper towels, cosmetics, personal care products, disinfectants, fungicides and germicides), construction materials (glues, plywood, fiberboard, fire retardants), and in rugs. The most significant source comes from pressed wood products manufactured with adhesives containing urea-formaldehyde resins.

Benzene 

Then there's benzene, also a well-established human carcinogen. Chronic exposure can result in aplastic anemia, where your body stops producing enough new blood cells. Benzene exposure in your home can occur through paint, adhesives and cigarette smoke. Living near a petrol station also increases the amount of benzene in your home, or having a garage entrance from your house.

Trichloroethylene 

Trichloroethylene (TCE), another known carcinogen, is a solvent found in certain cleaners, wood stains, varnishes, finishes, lubricants, adhesives, and paint removers. Research shows that exposure to TCE may be linked to the development of congenital heart defects. Right after we wrapped up filming our cleaning class, I was diagnosed with two rare heart defects and had to undergo open-heart bypass surgery to repair them. So, who knows? Perhaps my mother was exposed to high levels of TCE in her home or in the water when she was pregnant with me.

Toluene 

Toluene is a common air pollutant. It is present in areas where there is heavy traffic and tobacco use, and it's found in gasoline, paints, paint thinners, adhesives, lacquers, and nail polishes. Chronic exposure to toluene can cause fatigue, confusion, general weakness, nausea, and even memory loss or loss of appetite. Perhaps toluene is partially responsible for my sluggishness. After all, I now live right by traffic, surrounded by a community of smokers, with freshly painted walls in my apartment.

Xylene 

Xylene is also an air pollutant that, like TCE, is used as a solvent in cleaning products. It's also used in paints, paint thinners, varnishes, and more. Exposure to it can result in irritability, headaches, severe fatigue, depression, and more.

Ammonia 

Ammonia is an air pollutant that you may be exposed to while cleaning your home. It's present in cleaning products such as window cleaners or floor polishes. It can irritate the eyes and the respiratory and digestive systems.

The good news is that certain common houseplants can remove these harmful chemicals from the air. In a 1989 NASA study, and a follow-up study shortly after, scientists placed houseplants in closed chambers with formaldehyde, benzene, trichloroethylene, xylene and ammonia. What they found was that certain plants sequester in their biomass up to 90% of these chemicals in the air within just 24 hours. Their recommendation for cleaner air in our homes is to have 1 air-filtering plant every 100 square feet (9-10 meters square). In my case, that's only 7 plants for our entire apartment, which is completely feasible.

What are some of these air-filtering plants?

1. Variegated Snake Plant (Sansevieria trifasciata)

The snake plant has long leaves with sharp ends. It is an ornamental houseplant that is very tolerant of low light conditions and little watering. It is well suited for a bathroom with little light, or a bedroom as it produces lots of oxygen during nighttime. It filters formaldehyde, benzene, trichloroethylene, xylene and toluene. If you're on the lookout for a snake plant, ask your friends! You can take a cutting from their plant to propagate it, although it will take some patience. Keep it away from your pets, as it is toxic if consumed. All of the plants I'm going over are toxic to pets – so keep them out of their reach and children's reach too.

2. Red-edged dracaena (Dracaena marginata)

The red-edged dracaena's leaves are thin with red edges. This houseplant does well in low light and doesn't require much watering. This plant native to Madagascar is well suited for offices or homes. Like the snake plant, it filters all the VOCs I mentioned except for ammonia. It can be propagated with cuttings, as well.

3. Weeping fig (Ficus benjamina)

The weeping fig is a beautiful tree with glossy leaves that can reach about 100 feet in natural conditions. It filters formadehyde, xylene and toluene from the air. Careful, though: this plant is a common cause for indoor allergies and should not be around those allergic to latex because the leaves contain latex!

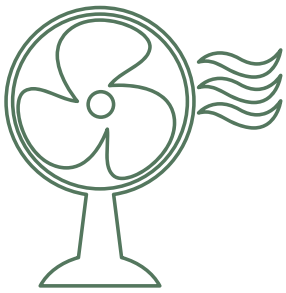
4. English ivy (Hedera Helix)

English ivy is an evergreen climbing plant native to Europe and invasive in the United States. We use it to make Enligh Ivy laundry detergent due to its high saponin content (see Laundry section). Little did we know it also filters formaldehyde, benzene, trichloroethylene, xylene and toluene from the air. When grown in controlled conditions, in pots indoors, it can be a wonderful houseplant. No need to buy any, it is quite easy to propagate. If it is common in your area, all you need is a plant cutting to get started. Remember not to plant it outdoors if it's not native to your region! Do not encourage its growth as it's damaging to the native plants.

These 4 air-filtering houseplants are perfect for cleaning the air in our homes. If you are specifically looking for plants that sequester ammonia, look for Peace lily, Flamingo lily and Florist's chrysanthemum. You can check out below the full list of 29 air-filtering plants that were studied by NASA and which specific pollutants they sequester.

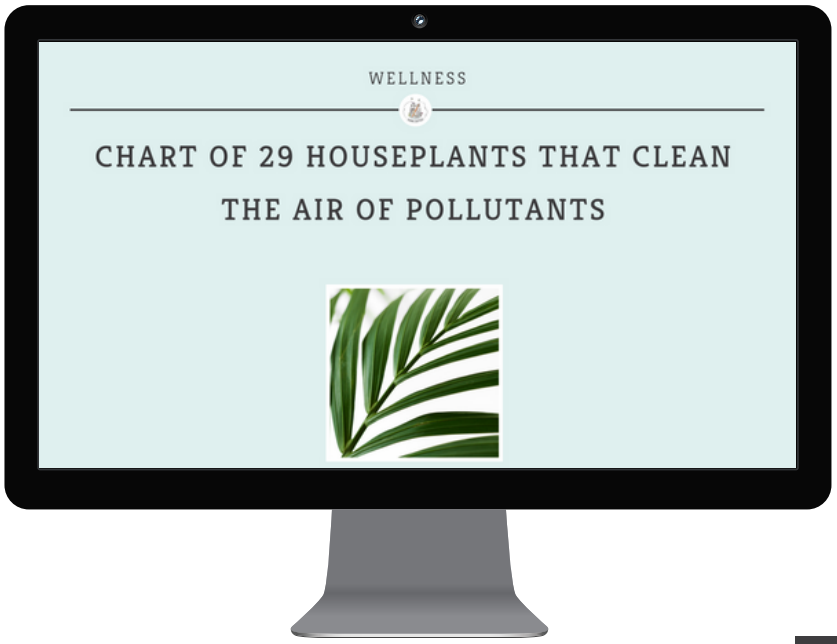
Other than bringing these into your home to improve air quality, you can also aerate your home weekly to let out gasses from chemically-treated furniture, walls, food, and so on. You can also dust your plants weekly with a damp cloth.

Clean Indoor Air Tips:



- Use air-filtering plants
- Dust plants weekly
- Aerate your home weekly
- Minimize use of products with VOCs

Check out the chart below which goes over more plants that clean the air.



HOUSEPLANTS THAT REMOVE AIR POLLUTANTS

Removes:		Benzene	Formaldehyde	Trichloroethylene	Xylene and Toluene	Ammonia
Weeping fig *(Ficus benjamina)*		No	Yes	No	Yes	No
Warneckei *(Dracaena deremensis"Warneckei")*		Yes	Yes	Yes	No	No
Variegated snake plant *(Sansevieria trifasciata'Laurentii')*		Yes	Yes	Yes	Yes	No
Spider plant *(Chlorophytum comosum)*		No	Yes	No	Yes	No
Selloum philodendron *(Philodendron bipinnatifidum)*		No	Yes	No	No	No
Rubber plant *(Ficus elastica)*		No	Yes	No	No	No
Red-edged dracaena *(Dracaena marginata)*		Yes	Yes	Yes	Yes	No
Peace lily *(Spathiphyllum'Mauna Loa')*		Yes	Yes	Yes	Yes	Yes

Removes:		Benzene	Formaldehyde	Trichloroethylene	Xylene and Toluene	Ammonia
Moth orchids *(Phalaenopsisspp.)*		No	No	No	Yes	No
King of hearts *(Homalomena wallisii)*		No	No	No	Yes	No
Kimberley queen fern *(Nephrolepis obliterata)*		No	Yes	No	Yes	No
Janet Craig *(Dracaena deremensis"Janet Craig")*		Yes	Yes	Yes	No	No
Heartleaf philodendron *(Philodendron cordatum)*		No	Yes	No	No	No
Florist's chrysanthemum *(Chrysanthemum morifolium)*		Yes	Yes	Yes	Yes	Yes
Flamingo lily *(Anthurium andraeanum)*		No	Yes	No	Yes	Yes
English ivy *(Hedera helix)*		Yes	Yes	Yes	Yes	No
Banana *(Musa Oriana)*		No	Yes	No	No	No

Removes:		Benzene	Formaldehyde	Trichloroethylene	Xylene and Toluene	Ammonia
Elephant ear philodendron *(Philodendron domesticum)*		No	Yes	No	No	No
Dwarf date palm *(Phoenix roebelenii)*		No	Yes	No	Yes	No
Dumb canes *(Dieffenbachiaspp.)*		No	No	No	Yes	No
Devil's ivy *(Epipremnum aureum)*		Yes	Yes	No	Yes	No
Dendrobium orchids *(Dendrobiumspp.)*		No	No	No	Yes	No
Cornstalk dracaena *(Dracaena fragrans'Massangeana')*		Yes	Yes	Yes	No	No
Chinese evergreen *(Aglaonema modestum)*		Yes	Yes	No	No	No
Boston fern *(Nephrolepis exaltata'Bostoniensis')*		No	Yes	No	Yes	No
Barberton daisy *(Gerbera jamesonii)*		Yes	Yes	Yes	No	No

Removes:		Benzene	Formaldehyde	Trichloroethylene	Xylene and Toluene	Ammonia
Bamboo palm *(Chamaedorea seifrizii)*		Yes	Yes	Yes	Yes	No
Areca palm *(Dypsis lutescens)*		No	Yes	No	Yes	No
Aloe vera *(Aloe vera)*		Yes	Yes	No	No	No

Source: NASA Clean Air Study

HOMEPLAY

Consider bringing air-filtering plants into your home! Ask your friends & family what plants of theirs you may be able to propagate. Or go to the gardening store with your list of houseplants handy. Which ones are you favorites so far or those you will be looking for?

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 6

POTENTIALLY UNCOMMON, SAFE INGREDIENTS FOR HOMEMADE CLEANERS

Whereas the ingredients from the previous chapter are all relatively easy to find in the USA, South America and Europe, these next 3 nontoxic ingredients will only be widespread and cheap in Europe. In the United States they are more difficult to come across and can cost a pretty penny to get your hands on them. Wherever you live, they are useful ingredients to know about!

Black soap

Profile:

Black soap, as sold in France, refers to a cheap liquid soap made of vegetable oils (most often flaxseed oil or olive oil) and potassium hydroxide. This particular black soap recipe was inspired by the 3,000 years old Aleppo soap recipe, which is made of lye, olive oil and laurel oil. Instead of being made from lye, however, it's made with potassium hydroxide, also called caustic potash. As mentioned in chapter 5, soap can be made with sodium hydroxide or potassium hydroxide. Since black soap is made from saponified potassium hydroxide, it creates a softer soap than it otherwise would with saponified sodium hydroxide – that's why it's liquid soap. This biodegrable black soap is specifically meant for cleaning – it would be too harsh to use on the skin. Make sure not to confuse this soap with "black soap" commonly sold in US health food markets, which is meant for body care (see purchasing tips for details).

Black soap Properties:

- corrosive
- degreases
- insecticide
- stain remover
- makes surfaces shine
- maintains silverware and metals

Safety Precautions:

In terms of safety, black soap, and household cleaning soaps in general, should not be used on your skin. They might irritate your skin since they aren't as fatty as soaps specifically made for skin care.

Purchasing tips:

Do not confuse French black soap with black soap commonly found in the United States. These soaps are two very different things. The term "black soap" in the States refers to a soap used for skin and hair care. There are different variations to the recipes found in the US, but it is often made of palm oil, palm kernel oil, shea butter, cocoa butter and potassium hydroxide. This soap is meant for skin care, not cleaning your home.

Black soap is commonly found in regular French supermarkets. If you are located in the United States, Marius Fabre black soap is available for online purchase through Amazon. Since there's less demand for this type of soap, it's 3 times the price in the United States as compared to France.
I have never come across black soap in bulk, and have only ever found it packaged in plastic. The best option here is to purchase it in a large bottle, to at least reduce the use of plastic.

Examples of Uses for Black Soap:

- Clean kitchen hood and oven
- Control aphids
- Laundry detergent recipe
- Cleaning floors
- Maintain silverware or objects made of brass, copper, metal and stainless steel

Tip:

Black soap is very concentrated. To use it for cleaning, dilute 0.5 tsp. to 1 tsp. only in one cup of hot water (not cold).

Sodium percarbonate

Profile:

Sodium percarbonate is a white alkaline powder that's made from mixing sodium carbonate (washing soda) and hydrogen peroxide. The finished product is nontoxic to humans and to the environment. It is extremely useful for whitening clothes and fighting mold. Still, the production of sodium percarbonate itself does come with some negative environmental impact. Let's look at the 2 ingredients necessary to manufacture it: Washing soda production is linked to habitat disturbance and chemical pollution, and hydrogen peroxide production involves a chemical process, which requires ingredients

derived from coal tar. Nonetheless, sodium percarbonate has a much lower ecological impact than its counterpart, bleach, which also has a slew of health concerns.

Sodium Percarbonate Properties:

- whitens laundry
- stain remover (in water at >104°F)
- softens water
- antibacterial
- fights mold

Limitations:

Do NOT use sodium percarbonate on aluminum, ceramic plates or wood surfaces.

Safety Precautions:

- Do NOT mix sodium percarbonate with acids like vinegar, lemon juice or citric acid
- Do NOT use sodium percarbonate near sources of heat – risk of combustion.
- Sodium percarbonate doesn't present any chronic health effects, but it is corrosive, so you do need to protect your hands with gloves and make sure not to get any in your eyes when you use it.

Purchasing tips:

If you live in the United States, it will be 2 to 4 times more expensive than in Europe. I have yet to come across this item in bulk, and have only ever found it in plastic packaging.

Alternatives

Instead of using sodium percarbonate to whiten your clothes, try putting a ¼ cup to ½ cup of lemon juice in every load of white laundry.

Examples of Use for Sodium Percarbonate:

Laundry additive for clothes stained with tea, coffee, wine, blood, or sweat
Clean moldy tile joints & shower curtains

Terre de Sommières Clay

Profile:

Terre de Sommières is a clay powder that's extracted from French and Moroccan quarries. Depending on where it's extracted, it can be white, purple, green or brown. It's a type of sepiolite cleaning clay that can amazingly

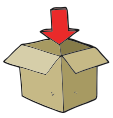
absorb 80% of its weight in water. The clay is not treated, is completely natural and nontoxic to the environment and humans.

Terre de Sommières Clay Properties:

- phenomenal absorptive strength (absorbs 80% of its weight in water)
- degreases
- removes stains on dry textiles (leather, suede)
- deodorizes

Limitations:

Do not use on wet surfaces. Do not get the clay wet prior to using it.



Storage:

Keep the clay in a dry, sealed container. To increase its absorptive properties, you can heat it 15 minutes in the oven at 140F to evaporate any humidity it may be holding. Doing so every couple of years will ensure your clay remains dry and effective.

Purchasing tips:

This clay is available for online purchase in the United States in compostable packaging, although it goes for a much higher price than in France.

Alternatives:

If you want something more local to you, search for leather cleaning clays in your area. Otherwise, cornstarch may do the trick if you're dealing with an easy stain on a dry textile.

Examples of Use for Terre de Sommières:

Remove fatty stains from furniture (butter, oil, makeup stains)
Wine stain remover
Clean plastics

•••

A FEW EXTRA PRODUCTS TO KNOW OF...

Diatomaceous earth

Diatomaceous earth is a natural silica powder that comes from quarries and fossalized microalgae. Deposits are found in parts of British Colombia and France. This earth is a mechanical insecticide: the cutting edges of the silica kill all types of insects and parasites as

they walk past. A little gross, I know. When purchasing diatomaceous earth, make sure there is no crystalline silica content. Never inhale the earth. The silica powder can be sprinkled on your mattress to fight a bedbug problem (vacuum afterwards) or sprinkled outdoors on your pet to fight pests (avoid their eyes!). Diatomaceous earth can also be used to tackle grease stains on dry textiles, but Terre de Sommières is more convenient for this.

Dr. Bronner's Sal Suds

Dr. Bronner's Sal Suds is a liquid cleaning recipe made with essential oils that can be used for general house cleaning, cleaning dishes, washing the laundry, or sanitizing floors. Unlike the other products listed, this product is not basic and the recipe won't be found with other companies. We do not have experience using it, but it does get an A+ rating on the Environmental Working Group's website (although it is not green certified and is listed as having some concern associated to its aquatic toxicity). It does contain sodium lauryl sulfate, and they do not specify whether it derives from palm oil or coconuts.

Fillaree is a zero waste cleaning shop that sells similar suds products that are free of palm oil and plastic packaging.

HOMEPLAY

Time to Stock Up!

Now that you know all the ingredients, both common and potentially uncommon that you'll need to make your products, you can start stocking up! Use the master list below for easy reference. If you prefer to simply stock up on the must-haves, vinegar and baking soda will cover a lot of your cleaning needs. In order to complete the cleaning cabinet essentials list, covered in our upcoming chapters, you will want to get all the supplies except for: the Terre de Sommières, soap nuts, and those listed under 'Get Resourceful'. The beeswax and linseed oil will only be necessary if you wish to make wood polish. Remember that if you intend on purchasing essential oils and soap nuts, you can use the discounts generously offered by our partners at Aromatics International and NaturOli once you register for our online cleaning course.

MASTER LIST

• CONSCIOUS CLEANING 101 INGREDIENTS •

Eco-friendly rating 1-5: Safety rating 1-5:

THE BASICS:

Vinegar	4 / 5
Baking Soda	3 / 5

STANDARD SUPPLIES:

Choose a soap:

• Marseille soap	4 / 5
• Castile bar soap	4 / 5
• Aleppo soap	4 / 5
Castile Liquid Soap	4 / 5
Washing Soda	3 / 4
Cornstarch	4 / 5
Citric Acid	3 / 4
Essential Oils	4 / 4

RECOMMENDED:

Black soap	4 / 5
Sodium Percarbonate	3 / 4

Terre de Sommières

Soap nuts

GET RESOURCEFUL:

Lemons

Salt

Hardwood Ash

Coffee Grounds

Local saponin-rich plant

OCCASSIONAL:

Beeswax

Linseed oil

PRODUCT GUIDE

• GREEN CLEANING INGREDIENTS •

If you do not have a zero waste store nearby or bulk options, these are great alternatives.

VINEGAR

Brand example: Spectrum
Available in US grocery stores

BAKING SODA

Brand example: Arm & Hammer
Available in US grocery stores

MARSEILLE SOAP

Brand example: Marius Fabre
Available on Amazon
(or in French grocery stores)

CASTILE BAR SOAP

Brand example: Mountain Naturals Soap
Available on Etsy

ALEPPO SOAP

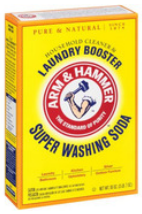
Brand example: Caria Natural soap
Available online

CASTILE LIQUID SOAP

Brand example: Aromatics International
Available online (comes with bubble wrap)

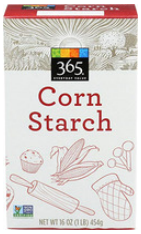
WASHING SODA

Brand example: Arm & Hammer
Available in US grocery stores



CORNSTARCH

Brand example: 365 or Rumford
Available in US grocery stores



CITRIC ACID

Brand example: Now Real Food
Available in US grocery stores, plastic

ESSENTIAL OILS

Recommended Brand: Aromatics International, comes with bubble wrap
Become a student HERE for a 15% discount on oils

BLACK SOAP

Recommended Brands: Starwax, Biovie, Briochin, Marius Fabre
Available on Amazon (or in French grocery stores). No plastic-free option known of.

SODIUM PERCARBONATE

Recommended Brands: La Droguerie ÉcoPratique, Starwax, Briochin
Available on Amazon (or in French grocery stores)

TERRE DE SOMMIÈRES

Recommended Brands: La Droguerie ÉcoPratique, Briochin, Leroy Merlin, Starwax
Available on Amazon* (or in French stores)

* The Hussard brand is available on Amazon US. It contains a hydrated magnesium silicate classified as an irritant in Europe. It must not be touched or inhaled.

SOAP NUTS

Recommended brand: NaturOli
Become a student HERE for 20% off soap nuts.

CHAPTER 6A BONUS: ZERO WASTE CLEANING TIPS

One of the principles of permaculture is to Produce no Waste. In nature, there is no waste: it's a cyclical system. But the world we live in has a throwaway culture with waste as an end product. Waste is an artifact of human existence. Resources are extracted and sent to the landfill. This Produce no Waste permaculture principle asks us to break ourselves out of this culture of obsolescence and consumerism by valuing resources.

In every part of this book, you will see that we put a lot of value in existing resources. We encourage you to use your existing cleaning gear or to find secondhand items that are in the waste stream, to give them a second life. We call on you to ditch single-use cleaning gear (paper towels, mop wipes, etc.) and switch to only reusable gear. We support repurposing old clothing or household items to craft your own cleaning gear. We love to see old spray bottles or cleaning containers being reused (when safe to do so). We teach you the

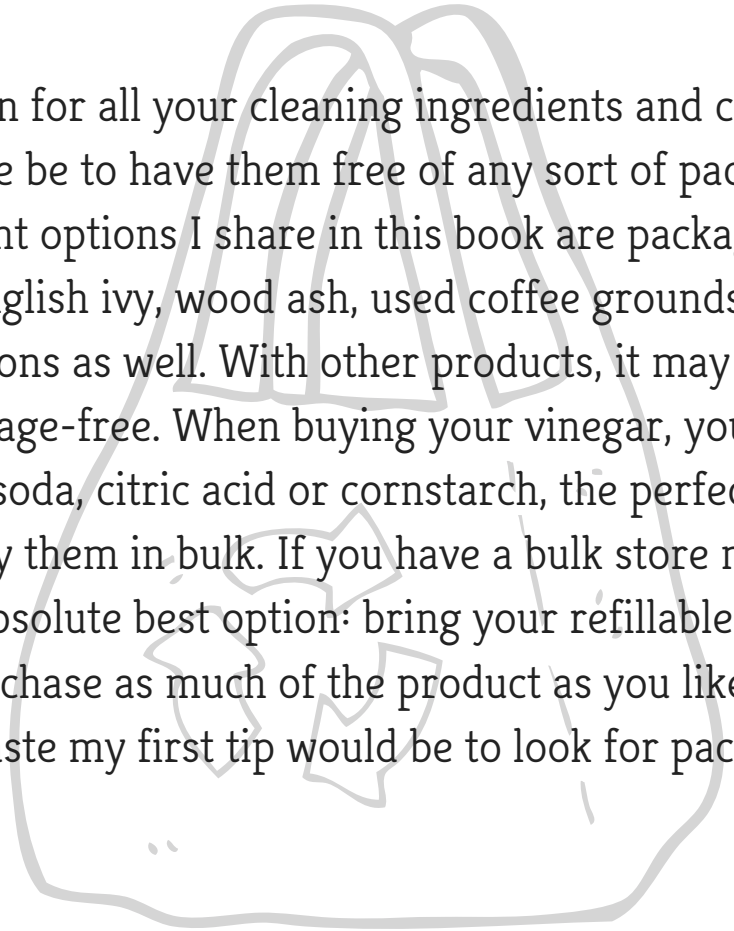
cleaning value of items that would otherwise be discarded (wood ash, kombucha vinegar, coffee grounds). We help you select products that are compostable and won't contaminate the waterways. Any step to value resources is a step in the right direction.

Of course, we still have to take into account that we live in this linear system and removing our activities entirely from the waste stream may be idealistic for the time being, although necessary in the long run. The more privileges we are blessed with, whether it's time, money, education, health, location, community, the easier it will be to make choices that create less waste. No matter your situation, I want you to feel empowered to make better choices for your health and for the Earth.

HOW TO NAVIGATE PACKAGING WASTE

When you are selecting the ingredients for your cleaning products, the perfect choice may not always be available to you. Make the best decision based on your specific situation.

1: Package-free



The ideal option for all your cleaning ingredients and cleaning gear would of course be to have them free of any sort of packaging. Some of the ingredient options I share in this book are package-free already, like English ivy, wood ash, used coffee grounds, and (hopefully) lemons as well. With other products, it may be trickier to find them package-free. When buying your vinegar, your baking soda, washing soda, citric acid or cornstarch, the perfect scenario would be to buy them in bulk. If you have a bulk store near you, that would be the absolute best option: bring your refillable jars and bottles and purchase as much of the product as you like. If you want to minimize waste my first tip would be to look for package-free options.

#2: Do It Yourself

If a package-free option isn't available, you may want to think about whether the cleaning ingredient or cleaning gear that you need is something you can make yourself. Maybe you need vinegar but the only available option is in plastic bottles. If that's the case, you can consider making kombucha vinegar or another type of homemade vinegar. Maybe you want synthetic-free cellulose sponges, but they are wrapped in plastic. In that case, maybe make a tawashi scrubber from old socks or grow a luffa!

Of course, if you're short on time, juggling jobs and kids, or have a disability, this might not at all be feasible for you. These are simply the ideal choices for the planet, in order. Make a decision based on what's feasible for you.

#3: Glass Containers

The next best thing would be glass containers. Glass can be recycled indefinitely and doesn't lose its quality over time, so it's one of the best materials to recycle. It also doesn't leech out dangerous substances or harm marine wildlife (at least to the extent that plastic does). Essential oils are sold in glass bottles, and that's a perfectly good option. If you have the choice between vinegar in a glass bottle or vinegar in a plastic bottle, the glass bottle would be the better choice. Of course, this game can get complicated if you have the

choice between organic vinegar in a plastic bottle and a glass bottle full of non-organic pesticide-grown vinegar Do you chose the pesticide-free version that will cause plastic pollution or the recyclable glass version that will cause environmental harm with pesticides? Sometimes, it's a catch 22 and you just have to remember that the better choice in these situations is your sanity. Do what you can and don't beat yourself up about it.

#4: Paper/Cardboard Packaging

Sometimes, you may have to choose between paper/cardboard packaging and plastic packaging. If that's the case, opt for the paper packaging. Paper can be recycled about 5 times, and can then be composted at the end of its lifecycle (of course, this doesn't apply to all types of paper, like glossy paper or paper that contains toxic ink). Still, paper is superior to plastic in terms of its ecological footprint. Plastic can also be recycled, but not all types of plastic. Where you live will further dictate what kinds of plastics can and can't be recycled. Recycling is wonderful, but it should be a last resort, because not a harmless process. It does require energy, chemicals and water to recycle paper or plastic. And like paper, plastic can only be recycled so many times – the problem is, once plastic can no longer be recycled, it will take years to decompose. It takes 10-20 years for a plastic bag to decompose, and 450 years for a plastic bottle to disintegrate. That's why we have so much plastic pollution in our oceans.

So paper or cardboard packaging would definitely be the much better option here. With baking soda, there is often the option in the States of purchasing it in a cardboard container or a plastic one. Opt for the cardboard option.

#5 When Plastic is Everywhere…

You may live in an area that doesn't have as many options. Maybe vinegar only comes in plastic bottles. If it isn't feasible for you to make your own vinegar and there are no zero waste alternatives to vinegar available, go ahead and buy the vinegar in a plastic bottle! There may not always be a perfect choice, but choosing vinegar in a plastic bottle over toxic cleaners in plastic bottles is absolutely the better option. If you need to buy a plastic bottle, see if you can purchase the largest bottle available and then make sure to reuse it or at least recycle it. I have yet to find black soap in bulk or in a glass bottle, but at least the bottle lasts a very long time before having to be discarded.

Some of the ingredient options may be hard to find plastic-free. As much as I love Marseille soap, the ones that are most commonly available are wrapped in plastic. Castile soap is often wrapped in paper, which is a better option. However, you have to beware of paper-wrapped Castile soaps that contain palm oil in them, which is responsible for the destruction of orangutan habitat. Here we are in a catch 22 again. Do what you can and search around for alternatives. You may find a local soap maker who makes their own package-free version of Marseille or Castile soap. If your soap maker typically packages their soaps, you can ask them to specifically forego the packaging on your order.

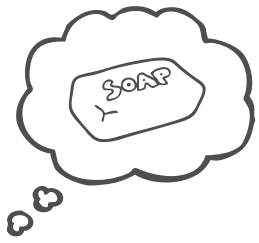
Some products like sodium percarbonate, terre de sommières clay, cornstarch and citric acid might come in a cardboard box, inside which you'll find hidden plastic packaging to contain the powder. If that's your only option, decide whether you actually need the product, check for alternatives, and then make the best choice you can without being hard on yourself.

HOMEPLAY

If you haven't already, search for local bulk stores near you to see if they carry unpackaged cleaning ingredients. If plastic-free palm-oil free Castile soap (or Marseille soap) isn't available near you, look up your local soap makers to see if they offer similar products themselves. Good luck and do what you can!

Names of closest zero waste or bulk stores (if there are any):

Names of local soap makers:



GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 7

QUESTIONABLE CLEANING INGREDIENTS

Some ingredients that you may have expected to see on the cleaning ingredients list did not make the cut. These are products that I used until I started digging deeper and realized they have associated health risks.

3% hydrogen peroxide

3% hydrogen peroxide is effective for disinfecting, whitening and cleaning. However, it's an irritant, it's very corrosive, it's flammable and it's dangerous if it's mixed with acids. Unlike sodium percarbonate, hydrogen peroxide is immediately harmful when you open the bottle. It starts releasing oxygen atoms, which are very aggressive, oxidizing, toxic to living organisms and a fire hazard. Using it safely calls for the use of gloves, avoiding inhalation and protecting eyes from possible contact. Since we have other products that are just as effective and far safer, this ingredient didn't make it to our list.

Borax

Borax or sodium borate is a natural occurring mineral in lakes. Of course, natural does not mean safe. Borax is a wonderful laundry booster because it eliminates odors and removes stains. In the United States, it's often touted as a safe

green product. However, it didn't make the cut because it's been classified in Europe as being a carcinogen, a mutagen and a reproductive toxin. It can negatively affect fertility and growing fetuses. In fact, it's illegal to sell borax in France for individual use – it can only be sold for professional use. Many safer ingredients can take its place, like washing soda, sodium percarbonate, and Marseille soap.

90° alcohol versus 70° alcohol

90° alcohol (called "cleaning alcohol" in France) is made up of denatured ethanol and methanol. It is commonly sold in France for cleaning purposes with an aroma added to it. It's used to clean windows, mirrors, stainless steel, plastic, to fight stains, disinfect and to decalcify sinks.

It is not on our list because it is highly flammable, can cause serious eye irritation, and is toxic if ingested.

70° alcohol is rubbing alcohol or isopropyl alcohol. It has similar cleaning properties to 90° alcohol. It is flammable and an irritant – there are respiratory concerns associated to it. It is toxic if ingested. If you decide to use it, it must be with gloves, in an aerated space. It should be kept far out of children's reach.

Talc powder

Talc powder (often called baby powder) is sometimes used to clean shoes, mattresses, or to fight ants. It is not used in our cleaning recipes because of its links to respiratory problems and cancer.

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 8

SAFETY PRECAUTIONS

This Green Cleaning book was created for you to have a safer home free of toxic cleaners. While the products we use are safe when used correctly, this doesn't mean that accidents won't happen. These ingredients are not meant to be consumed, to be applied to your skin, to get into your eyes, or even to be used in excess (in some cases). There are common sense safety rules to follow, and also some precautions you may not have considered. Please read this section carefully.

1 Keep all cleaning products out of children's reach

If accidentally consumed or applied to your skin, none of these ingredients would be deadly dangerous. HOWEVER, there may very well be harmful reactions. It is important to keep these products in a safe spot out of children's reach.

2 Wear gloves when cleaning your home

Recommended with:
vinegar
baking soda
household cleaning soaps
essential oils

Required with*:
washing soda
sodium percarbonate
citric acid

* I personally don't use gloves with these products; I just handle them carefully. Still, I prefer to mark these as required since they can irritate your skin more so than others. Green Dex (Amazon US) and Fair Zone (Europe) sell biodegradable gloves.

It's good practice to wear gloves when cleaning your home to protect your skin. Your skin is not meant to be regularly exposed to alkaline or acidic cleaning products – even vinegar! Household cleaning soaps in general should not be used on your skin: they might irritate your skin since they aren't as fatty as soaps specifically made for skin care. You may even be sensitive to essential oils on your skin. Whenever you are working with washing soda, sodium percarbonate, and citric acid, specifically, make sure to wear gloves.

We have worked with the products in this book for some time and know which ones do or don't cause dermal sensitivities to us in particular. Our recommendation is for you to follow our safety guidelines at all times.

3 Extra precautions for: washing soda, sodium percarbonate and citric acid

a. Careful handling

Washing soda, sodium percarbonate and citric acid require careful handling as they can cause skin (and potentially lung) irritation. When using them, make sure to wear gloves, protect your face, and wash your hands well when you're done. If you accidentally get one of these ingredients in your eyes, immediately rinse your eyes with lots of water, and call your care provider.

b. Do not mix washing soda or sodium percarbonate with acidic substances (see section 5)

c. Do not use sodium percarbonate near sources of heat: risk of combustion.

d. Do not confuse washing soda with caustic soda. Caustic soda, which is lye (sodium hydroxide), is dangerous and can cause chemical burns.

4 All containers must have legible, accurate labels

These ingredients are safe when used correctly. Label all containers to make sure you don't accidentally consume these products or apply them to your skin. Always take off old labels to ensure there is no risk of confusion.

Products stored in their original containers must have legible labels.

5 Ingredients never to mix together

NEVER mix:

- Sodium percarbonate
- Washing soda
- Bleach

With:

- Any acidic substance
- Vinegar
- Citric acid
- Lemon juice

Sodium percarbonate and washing soda should never be mixed with any acidic substance, like vinegar, citric acid or lemon juice.

6 **Do not use 14% acetic acid vinegar**

Use 5%, 8% or 12% acetic acid vinegar only. Never use 14% acetic acid vinegar and certainly don't breathe in its fumes, especially when heated.

7 **Essential oils safety**

a. Always mix prior to use

Essential oils are potent. Never use essential oils without mixing them first in a carrier oil or other substance as they may cause allergic reactions. If you are preparing a liquid mixture, use 20 or more drops of essential oils for 7oz of liquid, such as vinegar or water.

b. Prevention of dermal sensitivities

Because essential oils are so concentrated, it's good practice to wear gloves when working with them to prevent possible dermal sensitivities. This is especially important if this is your first time working with a particular oil.

c. Respiratory sensitivities

Some people may have respiratory sensitivities to certain kinds of essential oils. The oils emit volatile organic compounds that may irritate your lungs. For this reason, they should not be overused.

d. Aerate rooms after use

To decrease the likelihood of respiratory sensitivities, aerate rooms after using essential oils for cleaning.

e. Avoid around small children

Small children may have adverse reactions to certain essential oils. Avoid using essential oils around them, especially on floors.

f. Reduce use around pets

Essential oils, and tea tree in particular, should not be used to clean animal cages, liter boxes or areas used frequently by your pets.

g. Some oils not adapted for everyday use

Stronger oils, like cinnamon and clove oils, are not adapted to everyday use – they are meant for acute situations for disinfecting a household when your family is sick. Citrus and tea tree oil, however, are gentler oils for everyday use.

8 Using sponges safely

a. Separating kitchen sponges from other household sponges

To keep your sponges safe for use, make sure to have a separate sponge specifically dedicated to cleaning anything that holds food or beverages, like cookware, dishes and silverware, and only that. Keep another sponge specifically for the toilet, and only that. Other sponges can be used around the house. Never use a house sponge to clean your dishes.

b. Sponge maintenance and disinfection

After using your sponge, squeeze it out very well, rinse it with hot water, then squeeze it out again and make sure it is set out to dry properly and not left to sit in a pool of water.

It's good practice to disinfect your sponge every week or so, or else it will harbor bacteria. You can do so by putting it in the microwave for a couple minutes but only do so if 1. your sponge is wet (or it can catch fire!) and 2. you are certain that your sponge isn't made of metal or synthetic or treated with chemicals or you'll end up breathing in toxic fumes. Make sure not to burn yourself when retrieving your sponge. I wouldn't recommend putting a luffa sponge in the microwave. You can also put your sponge in the dishwasher with your dishes and wash on high heat, or wash it on high heat in your washing machine.

9 Dispose of your old toxic cleaning products

Read the product's label for proper disposal. Oven cleaners or drain cleaners will likely have specific instructions for disposal as household hazardous waste. If there aren't instructions for disposal, the official recommendation is to treat water-soluble cleaners (like dishwashing soap and laundry soap) as non-hazardous waste. The American Cleaning Institute asks you to consider how you would typically use the product to make a decision about how to

dispose of it. It is generally considered safe to dispose of dishwashing soap down the drain, for instance, or of toilet bowl cleaner down the toilet. These chemicals will be treated just as they normally would have been by your water treatment plant. If you have a septic system, you should be able to dispose of them in the same way, but it's best to verify beforehand, depending on the product. When it comes to powders, however, don't throw out a lot at once or they may clog your drain. For help disposing of toxic cleaners, check out The Worst First list below.

(I'm sharing the official recommendation for the United States. Research what is done in your area. If this disposal method makes you cringe as much as I do to think of throwing waste down the drain, I leave it up to your discretion to decide whether you want to treat your old cleaners as hazardous waste and send them all to your hazardous waste disposal center.)

10 Do NOT reuse containers for dangerous products

This includes containers for rodent poison, insecticide, insect repellent, weed killer, drain openers, car cleaners, and oven cleaners.

THE WORST FIRST

You might be ecstatic to get rid of all your toxic chemicals, or potentially overwhelmed by the idea! If you are wondering where to get started, get rid of the worst first! Here are the first items to ditch: the most hazardous.

- Drain openers
- Oven cleaners
- Toilet bowl cleaners
- Tub and tile cleaners
- Spot removers
- Bleach
- Ammonia
- Furniture polish
- Insecticide/Insect repellent
- Rodent poison
- Weed killer
- Windshield wiper fluid
- Car wax
- Car cleaner
- Shoe polish

SAFE CLEANING GUIDELINES REMINDER

1. **Keep all cleaning products out of children's reach**
2. **Use gloves when cleaning your home**
3. **Extra precautions for: washing soda, sodium percarbonate and citric acid**
    a. Wear gloves, protect eyes & face
    b. Do not mix washing soda or sodium percarbonate with acidic substances
    c. Do not use sodium percarbonate near sources of heat
    d. Do not confuse washing soda with caustic soda (lye)
4. **All containers must have legible, accurate labels**
5. **Sodium percarbonate and washing soda should never be mixed with any acidic substance, like vinegar, citric acid or lemon juice.**
6. **Do not use 14% acetic acid vinegar**
7. **Essential oils safety**
    a. Always dilute or mix prior to use
    b. Wear gloves to prevent dermal sensitivities
    c. Prevent respiratory sensitivities by not overusing
    d. Aerate rooms after use
    e. Wipe surfaces with water after use

f. Not all oils are suitable for use around small children
g. Reduce use around pets
h. Not all oils are adapted for everyday use (i.e. cinnamon, clove)

8 **Using sponges safely**

a. Separate kitchen sponges from other household sponges
b. Wash & squeeze sponge after use
c.Disinfect weekly

9 **Dispose of your old toxic cleaning products**

a. Read label for proper disposal method
b. No instructions? Read more in chapter 8 or check American Cleaning Institute recommendations.

10 **Do NOT reuse the containers of dangerous products.**

Poison Control USA:
Call 1-800-222-1222
Free & confidential

HOMEPLAY

It's time! Round up all your toxic cleaning supplies, read their labels for proper disposal methods, and say buh-bye or "good riddance", even! Consider keeping some of the bottles from the less toxic products to reuse them (stay tuned for details in chapter 9). If you skimmed the safety guidelines, go back and read them carefully. Print them. (I know – paper, right? But this is important.) Post them on your wall. Make sure you are being safe! So, to recap:

- Read and print the safety guidelines..... ☐
- Ditch your toxic cleaning products (safely!)..... ☐
- Consider keeping the bottles (details in chapter 9)..... ☐

GREEN CLEANING

(minus the greenwashing B.S.!)

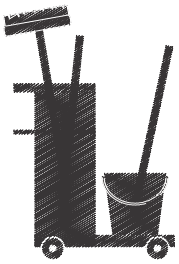
CHAPTER 9

CLEANING SUPPLIES

When it comes to cleaning consciously, it's not only the ingredients that we make use of in our homes that we need to examine, but our cleaning gear as well. In this section, we help you determine how to choose the appropriate cleaning gear while minimizing your carbon footprint, your waste, and your overall environmental impact. We will encourage you to be resourceful by reusing or repurposing items you already have, to use secondhand gear whenever possible, and to beware of greenwashing.

Durable Cleaning Equipment

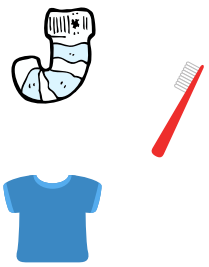
- Broom and dustpan
- Extendable duster
- Toilet brush
- Vacuum cleaner



These items are all durable and should last a lifetime, or at least a very long time. They do not need to be purchased brand new to get the job done. Have a look at your local thrift store, Craigslist, or the nearest University campus at the end of the school year to see what gear is looking for a new home.

Repurposing Clothes and Toothbrushes

An old sock → perfect for cleaning nooks & crannies
An old cotton T-shirt → ideal soft rag
An old toothbrush → ultimate scrubbing tool



Reusing Old Cleaner Containers

- Spray bottles
- Pump bottles
- Toilet bowl cleaner bottles
- Laundry detergent bottles
- Dishwasher powder containers

Are you throwing out toxic cleaning products? Consider saving some of the containers. Do NOT reuse containers for extremely dangerous products like rodent poison, insecticide/insect repellent, weed killer, drain openers, car cleaners, etc. Carefully wash the ones you do keep, take off old labels, and re-label them. It's so useful to keep these containers instead of extracting new environmental resources to buy new ones.

Don't like the idea of potential remnant of toxic cleaning products lingering in your containers? Ask around for old containers from cleaning products that are eco-friendly instead.

Non-Durable Cleaning Equipment

Floor mops

1. DIY mop

This DIY mop reduces waste and minimizes carbon footprint. You can easily fashion your own mop head by cutting a hole in

an old towel and putting it over an old sweeper mop. Like any mop, you'll have to switch out the mop head every couple years or so when it shows signs of wear and tear.

Mop maintenance: Rinse out the dirt and leftover soap after each use. Make sure it doesn't stay damp between cleanings. You can put the towel in with your regular laundry load.

2. Store-bought cotton mop

When purchasing a mop, cotton mops will have the smallest environmental impact. There are two basic cotton mop models:

1) The classic mop with loose fringes – these are great for cleaning tile floors, but will damage wood surfaces over a long period of time because they carry a lot of water.

2) The rectangular cotton mop is less wet, making it better for wood surfaces and also great for corners due to its shape. (Remember, no need to purchase sweeping cloth refills, you can fashion your own with an old towel.)

Beware of greenwashing: So-called “environmentally-friendly” mops that are made out of bamboo are often treated with dangerous chemicals that are neurotoxins and toxic to the environment to create a bamboo viscose.

Sponges

Sponges are one of those items that need to be replaced the most often. To reduce waste, we want to make sure our sponges are durable, compostable and produced sustainably! We will walk you throw how to make your own sponges (let’s get crafty, y’all!), how to grow your own sponge (whaaat?!), how to buy eco-friendly sponges (your time is valuable!), and what sponges to avoid (our no-BS list).

Get ready to *soak up* lots of great information about sponges!

Part 1: Making your own sponge

Weaving a tawashi scrubber

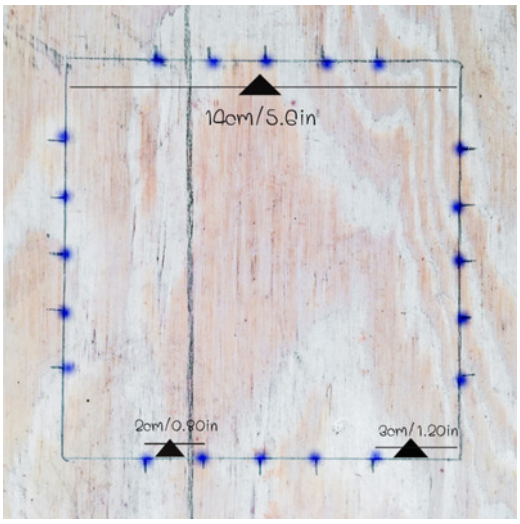
If you are into knitting, consider knitting your own sponge. If knitting isn’t your forte, however, and you can’t commit too much time, the tawashi scrubber is the way to go! It’s easy to make, you’ll repurpose old socks or stockings, and it’ll last longer than a conventional sponge.

Materials:

- Old thick stockings, tights or socks
- A wooden board (at least 16-20cm (6-8") per side)
- 20 nails
- scissors
- a hammer
- a pencil
- a ruler
- a protractor or try square

Steps (click here for video instructions):

How to make your reusable tawashi board:



- Use your pencil, ruler and try square to draw out a 14cm square on your wooden board.
- Use your pencil to mark dots along the square: the first dots need to be 3cm from each corner of the square; the other dots need to be spaced out 2cm from each other (see image).
- With your hammer, firmly plant the nails into the board onto each of the 20 dots.

How to make your own eco-friendly dish sponge:

- Cut your socks, tights or stockings into 10 rings up to 8cm thick.
- Attach the rings to the nails vertically: start by securing one ring to the nail closest to you on the left and stretching it to attach it to the opposite nail furthest from you on the left. Attach 4 more rings vertically (see image).
- Weave the remaining rings horizontally in and out of the vertical rings: start by attaching a ring to the top left nail on the left side of the square and pass it over the first vertical ring, under the second vertical ring, over, under and over and then hook it to the opposite top right nail on the right side of the square. Attach 4 more rings horizontally, but weaving the opposite way with each new ring: Horizontal rings 2 and 4 would be under, over, under, over, under (see image).
- Unhook any ring from its nail, then unhook a second ring right next to it. Pass the second ring into the first ring. Hold on to the second ring and let go of the first ring. The second ring now becomes the "first ring". Continue this step all around your square. Tighten as you go, as needed.
- The final ring that you end up with is the hook that you'll use to hang and dry your tawashi sponge!

Part 2: Growing your own sponge

Did you know you could grow your own sponge on land or harvest one underwater?! The latter is mostly reserved for aquaculture experts, but with some help you could easily get the hang of growing luffa sponges on land!

1. Growing luffa sponges

If you live in a relatively warm climate, like North Carolina – or a USDA zone 6 or higher – you can grow your own sponges! A luffa sponge is an Asian fruit that has abrasive fibers, making it wonderful for cleaning around the house and even to exfoliate your feet. You can get ahold of luffa seeds and start your seeds around April. Make sure they have a trellis to grow on, and within 6 short months, you'll have a beautiful bounty of luffa gourds that you can harvest and use as sponges. Let them dry on or off the vine, take off their skin, save their seeds, and you're all set! These sponges are compostable once they reach the end of their lifecycle.

2. Harvesting sea sponges

Sea sponges are animals that live on the ocean floor and are not considered endangered. Although they are technically animals, they don't have a brain or a central nervous system. If harvested properly, their natural reproductive process isn't disrupted, which is why their harvest

is usually considered sustainable. The process of commercializing a sea sponge for sale produces little waste and doesn't use chemicals. The final product is biodegradable once it reaches the end of its lifecycle. If you wish to purchase a sea sponge, consider first how far it has to travel to get to you – there might be a better option based on your location.

Part 3: Purchasing eco-friendly non-toxic sponges

So, you want to purchase a sponge that respects the environment and is non-toxic, but there's no way you have time to knit one or grow one. We get it!! Let us walk you though your options.

Instead of purchasing a regular two-faced sponge, we recommend buying both a vegetable-based sponge and a luffa.

1. Purchase a vegetable-based sponge (without a scratchy side)

A vegetable-based sponge will typically be made from wood cellulose, cotton, and salt (to make those holes in the sponges!). Of all the sponges you'll find at the store, these will have the smallest carbon footprint. To check whether the wood has been sustainably produced and harvested, look for the Forest Stewardship Council label. As long as it hasn't been treated with chemicals, this sponge will be biodegradable. It has wonderful absorptive qualities and is perfect for soaking up spills.

2. Purchase a luffa sponge

If you aren't able to grow your own luffa, consider buying a luffa sponge. It is pricier than a regular scratchy sponge, but it has a fantastic abrasive quality – perfect for scrubbing off food that's stuck onto your pans and metallic grills. It's not very absorptive, which is why you would use it in conjunction with the vegetable-based sponge.

Part 4: What not to buy

1. Say no to synthetic sponges (and most two-sided sponges)

We recommended staying away from synthetic sponges. They are made with ingredients derived from petroleum and are treated with harsh chemicals. They don't absorb as well as vegetable-based sponges anyways and aren't biodegradable. If a synthetic sponge has both a softer and a scratchy side, the glue that sticks both sides together typically isn't biodegradable either.

For most surfaces, you won't want a sponge with a scratchy side anyways. To avoid damaging your surfaces, you don't want to use the scratchy side of sponges on electronics, tables, countertops, wood furniture, mirrors, windows, sinks, acrylic tubs and flexible plastics.

2. The truth about microfiber cloths

We have seen microfiber cloths touted as a green product. The truth is, they simply aren't. Microfiber cloths are synthetic tissues that are made from petroleum.

Yes, the fibers are extremely useful for removing all types of filth. But their production is just not sustainable. In addition, it's very hard if not impossible to recycle them because they're often made of polyester and polyamide. If you already have microfiber cloths, stop using them. They create microplastic contamination in our oceans and our tap water. Simply washing your microfiber cloth releases tiny plastic particles in water which harms marine life when it reaches the rivers and oceans. The US also has the highest microfiber tap water contamination rate at 94%. The health implications for humans of microfibers in our tap water remains unknown, but based on the implications it's been having for marine wildlife, the situation is very concerning.

Cleaning Gloves

Some of the ingredients you'll be working with might be too alkaline or acidic for your skin, and some soaps won't be as soft as soaps meant specifically for body care.

To avoid any kind of skin reaction, it's a good idea to wear gloves. Use reusable gloves as opposed to single use gloves, such as thick natural latex gloves (provided you aren't allergic). Many gloves are

made of a mix of latex and synthetic materials. Look instead for biodegradable gloves like Green Dex and Fair Zone. You can also choose FSC-certified gloves to ensure they were produced under sustainable forest management guidelines. If you're sensitive to latex, some latex gloves have a cotton interior.

Ditch & Switch - Disposable Cleaning Supplies:

Single-use items are polluting our environment. Let's switch to reusable cleaning gear, just like our grandparents used to use!

- Ditch Single-Use Gloves → Switch to Reusable Latex Gloves


- Ditch Single-Use Mop Pads → Switch to a Cotton Mop


- Ditch Paper Towels → Switch to Washable Rags


- Ditch Single-use Disinfectant Wipes → Switch to Soapy Rags


CLEANING GEAR
· MASTER CHECKLIST ·

Secondhand
Repurpose
Reuse
Craft or Purchase New Eco-Friendly Model
Grow, Craft, or Purchase New Eco-Friendly Model
Purchase New Eco-Friendly Model

- Broom and dustpan
- Extendable duster
- Toilet brush
- Vacuum cleaner
- Pan scraper
- Hampers
- Clothes drying rack
- Iron
- Plunger
- Reusable Plumbing Snake Drain Auger
- Hair Catcher
- Bamboo soft brush for clothing
- Large bucket (or simply a sink!)
- Small rags (old socks)
- Soft rags (old cotton shirts)
- Scrubbing tool (old toothbrush)
- Spray bottles
- Pump bottles
- Toilet bowl cleaner bottles
- Laundry detergent bottles
- Dishwasher powder containers
- Floor mops
- Sponges
- Gloves
- Bamboo Dish Scrub Brush

HOMEPLAY

It's time to do an inventory of what you have! Do you own useless cleaning gear that's just taking up space in your home? Here's your permission to minimize and donate it. Use the cleaning gear master list to determine what you will actually need, and get resourceful. Keep the useful cleaning gear that you do have… unless you know that it's covered in toxic chemicals (paints, varnish finishes, etc.)… and unless we're talking about microfiber cloths. Microfibers cause plastic contamination in our waterways and should no longer be used. Do not discard them; they will still leach plastic into the water from the landfill. And don't attempt to recycle them; it's not possible unless there's a special recycling program through the company you purchased them from. Instead: how about doing an arts & crafts piece with them? Hey, I'm as lost as you as here. Get creative to make sure they don't cause more pollution than they already have.

To recap:

- Stock up on your cleaning supplies using your cleaning gear master list ☐
- Ditch microfiber cloths and potentially toxic cleaning gear ☐

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 10

INTRODUCTION TO CLEANING RECIPES AND TRICKS

Now that you have the basic information about the cleaning ingredients' properties and the safety instructions to keep in mind, you can create your own recipes from scratch. In the next 4 chapters, I will be going over your list of cleaning cabinet essentials for each room of your home, as well as cleaning tricks. These cleaning cabinet essentials are the products you'll want to make in bulk to have a steady supply of basic cleaning products on hand. I suggest you make a small batch of each recipe first, to ensure you've gotten the proportions down correctly and that you are satisfied with the product. Then, I recommend putting aside an afternoon to make about a year's supply of all of these recipes. That way, you won't have to worry about making new products for quite some time. You might even want to make extra for your friends and family!

Below, you'll find your list of cleaning cabinet essentials as well as labels for each product that you can reproduce yourself or print out. We also added a reminder about which ingredients not to mix together in case you want to get creative!

Cleaning Cabinet Essentials List

Kitchen:

- Kitchen Surfaces Cleaner
- Dishwashing Soap
- Dishwasher Powder

Laundry Room:

- Hamper ball
- Pre-treat stain remover
- Laundry powder (or soap nuts)
- Whitener
- Fabric Softener
- Laundry Perfume
- Dryer Sheets or Wool Dryer Ball

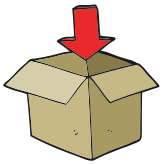
Bathroom:

- Daily Shower Spray
- Fighting Mildew
- Mold-fighting mix
- Scouring paste
- Toilet fizzies
- Toilet cleaner
- Beeswax candle or essential oils diffuser

Kitchen:

- Multi-purpose cleaner
- Floor cleaner
- Window cleaner
- Wood polish
- Air freshener options:
  - Tea tree oil spray
  - Vaporizer
  - Pot-pourri

STORAGE SAFETY REMINDER:



- Always store cleaning products out of children's reach.
- Always label your DIY recipe containers.
- Products stored in their original containers must have legible labels.

PRODUCT LABELS

LAUNDRY PERFUME

LAUNDRY ROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Water, Lavender essential oil

INSTRUCTIONS:
Spray after wash or before wearing

DRYER SHEETS

LAUNDRY ROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Vinegar, Lavender essential oil

FABRIC SOFTENER

LAUNDRY ROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Vinegar

INSTRUCTIONS:
1 cup per load in softener dispenser

ASH LAUNDRY SOAP

LAUNDRY ROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Water, Wood ash

INSTRUCTIONS:
¾ cup to 1 cup per load

DAILY SHOWER CLEANER

BATHROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Vinegar

IVY LAUNDRY SOAP

LAUNDRY ROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Water, English ivy (Hedera helix)

INSTRUCTIONS:
¾ cup per load

BATHROOM SCOURING PASTE

BATHROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Baking soda, black soap

TOILET FIZZIES

BATHROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Baking soda, Citric acid, Cornstarch

MILDEW REMOVER

BATHROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Baking soda

INSTRUCTIONS:
Humidify sponge, sprinkle mildew remover, scrub affected areas

MULTI-PURPOSE CLEANER

LIVING AREAS

THIS IS MADE WITH LOVE

INGREDIENTS:
Vinegar, Lemon essential oil

FLOOR CLEANER

LIVING AREAS

THIS IS MADE WITH LOVE

INGREDIENTS:
2 tbsp. black soap in bucket of warm water

TOILET BOWL CLEANER

BATHROOM

THIS IS MADE WITH LOVE

INGREDIENTS:
Water, Black soap, Eucalyptus essential oil

AIR FRESHENER

LIVING AREAS

THIS IS MADE WITH LOVE

INGREDIENTS:
Water, Tea Tree essential oil

WOOD POLISH

LIVING AREAS

THIS IS MADE WITH LOVE

INGREDIENTS:
Olive Oil, Beeswax, Black soap

WINDOW CLEANER

LIVING AREAS

THIS IS MADE WITH LOVE

INGREDIENTS:
Water, Vinegar

WHAT NOT TO MIX TOGETHER

…from the DANGEROUS:

NEVER mix these:

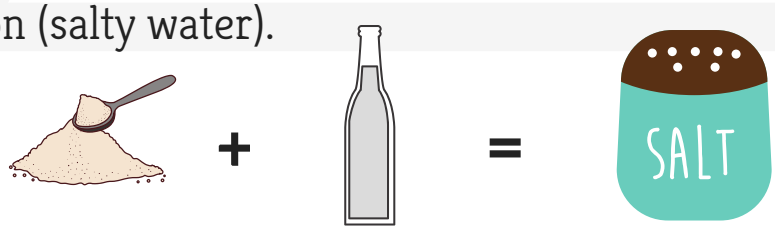
- Sodium percarbonate
- Washing soda
- Bleach

With:

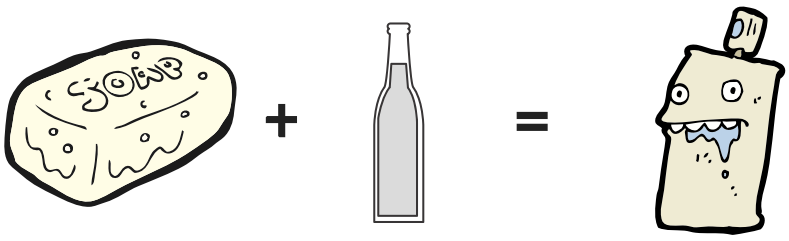
- Any acidic substance
- Vinegar
- Citric acid
- Lemon juice

… to the USELESS:

Do not (pre-)mix baking soda + vinegar = dilute sodium acetate solution (salty water).



Do not mix Castile soap or black soap with vinegar = curdled liquid with no cleaning value (reverses saponification).



GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 11

KITCHEN

Let's start in the kitchen! This is where daily messes happen and the area you'll likely be cleaning the most often. It's crucial to use nontoxic products on surfaces where food is being prepared for you and your family. I'm going to share 3 of the most useful recipes for daily use: your cleaning cabinet essentials. These are the ones you are going to want to make in bulk to have on hand whenever you need them. I'll also share other useful recipes for the kitchen. Then I'll go over some helpful cleaning tricks with you, so that you can get ideas for how baking soda, vinegar, lemon and other basic ingredients can be used to sanitize your kitchen space.

Cleaning Cabinet Essentials:

1. Kitchen Surfaces Cleaner
2. Dishwashing Soap
3. Dishwasher Powder

1. Kitchen Surfaces Cleaner

This soap is ideal for cleaning kitchen surfaces, the cooker hood, the oven, ceramic hobs and tiles. This cleaner is corrosive, it's an insecticide, it degreases, removes stains and makes your surfaces shine.

Ingredients & Materials*:

- Black Soap
- Hot water
- Two 32oz spray bottles
- Funnel

* for approximately 1 year's supply (family of 2)

Steps:

- Dilute 4 to 8 tsp. of black soap in 8 cups of hot water
- Transfer with a funnel to your two spray bottles
- Label your bottles
- Store safely

Alternative: Replace the black soap with liquid Castile soap at the same ratio. For a vinegar cleaner instead, see below. Note that vinegar erodes marble and granite countertops.

2. Dishwashing soap

This dishwashing soap has antiseptic and antimicrobial properties to clean your dishes. The extra washing soda degreases and fights limescale. The liquid Castile soap adds additional antimicrobial properties, but also more bubbles! The vegetable glycerin is added so that the mixture thickens. The vegetable glycerin gives the soap a thicker consistency so that it doesn't wash right off with the washing water. It is not my favorite ingredient since it is made from palm trees, which threatens orangutan habitat. The moment I find an alternative, I will update this recipe.

Ingredients & Materials*:

Gloves
Pan & stovetop
Grater
15 cups of water
2/3rd cup (10 tbsp.) grated Castile bar soap
1 and ¼ tsp. of washing soda
5/6th cup liquid Castile soap
1/3 cup vegetable glycerin
2 tsp. (150 drops) lemon essential oil

* for approximately 1 year's supply (family of 2)

Steps:

- Mix the water in a pan with the grated Castile bar soap and the washing soda
- Place over medium heat

- Once homogenous, take off the heat
- Add 1/3 cup of liquid Castile soap, the vegetable glycerin and the lemon essential oil
- Stir well
- Transfer to pump bottle, label
- Wait 12-24 hours for mixture to thicken (if it isn't thickening sufficiently, place in refrigerator 24 hours)
- Add ½ cup liquid Castile soap, mix
- Store safely

3. Dishwasher powder

This powder leaves your dishes looking clean and shiny. The citric acid is antibacterial, the washing soda degreases, and the Marseille soap disinfects. Note that the Marseille soap might stick to the container a bit if you leave it sitting in a hot room.

Ingredients & Materials*:

Citric acid, 3 and 1/3 cups
Washing soda, 3 and 1/3 cups
Finely grated Marseille soap (or Castile soap), 3 and 1/3 cups
Gloves

* for approximately 1 year's supply (family of 2)

Steps:

- Mix equal parts of all 3 ingredients (3.3 cups each)
- Transfer to large labeled containers
- One dose = 3 tbsp. of powder in the soap dispenser
- Store safely

If you are living in a hot and/or humid climate, you may want to make dishwasher powder balls instead. Use 3 tbsp. per ball and add a bit of water to hold the ball together.

Other cleaning recipes & tricks

1. Scouring Paste

- Mix 6 parts baking soda & 1 part Castile soap
- Use this paste to clean stuck-on gunk and difficult-to-clean spots

2. Extra greasy surfaces

This recipe is great for the kitchen hood or the oven door.

Ingredients:

- 1 tsp. washing soda
- ¼ cup black soap
- 2 tsp. water

Steps:

- Mix the washing soda and black soap with 2 tsp. of water.
- Use to clean greasy areas with a sponge.
- Let sit for 10 min.
- Scrub and rinse.

3. Coffee maker

Simply rinsing your coffee maker is enough. Nothing but water and coffee should go in your machine. (If you still want a tougher clean, run with ½ water and ½ vinegar. Then run twice more.)

4. Coffee grinder

Your coffee grinder should stay as dry as possible. You don't need to necessarily clean it; wiping it with a soft cloth is sufficient. (If you insist on cleaning, do not use soap. Grind white rice, then baking soda. Clean out with a dry towel.)

5. Lipstick stain on a glass

Do not rub the lipstick stain or you will spread the stain. Put salt on a humid sponge, scrub, then rinse.

6. Eliminate traces of tea, coffee and spices

Put a pinch of citric acid into the stained cup. Add boiling water and let sit for 30 min. Rinse.

7. Smelly Cutting Board

- Method 1: Deodorize by cutting a lemon in half and rubbing the lemon on the board.
- Method 2: Spray vinegar on cutting board. Leave 30 min. Rinse.

8. Natural Scrubber

Cut a lemon in half. Apply salt to the lemon. Scrub stuck-on food and sticky surfaces with the lemon.

9. Countertop Stain Removal

Remove by rubbing stain with lemon juice. Leave juice on for a few min. Scrub with baking soda. Tada!

10. Removing hardened food

- Method 1: Sprinkle salt in pot/pan with stuck-on food & add vinegar. Scrub.
- Method 2: Sprinkle salt in pan. Add cool water. Leave 1 h. Wipe clean.

11. Burned pot

- Method 1: Fill with boiling water, add vinegar and baking soda. Let soak overnight and scrub.
- Method 2: Sprinkle washing soda at the bottom of the pan. Cover with boiling water. Let soak 12h. Scrub.
- Method 3: Add 2 tbsp. of citric acid. Mix with 1 cup of water into pot. Heat it up. Scrub. Rinse.
- Method 4: Put wood ash at the bottom of the pan. Fill with water. Leave 1 hour at low boil. Compost ash. Rub bottom with toothbrush. Burn marks will fade.

Health Tip: Avoid Teflon pans that release toxic chemicals at high heat.

12. Cleaning grease off of screens above kitchen

Take the screens out. Cover with baking soda. Add boiling water. Leave 1 hour. Scrub with toothbrush. Rinse.

13. Stained Tupperware

- Method 1: Squeeze lemon juice in stained Tupperware container, and apply juice to the edges that are stained. Place in direct sun for several hours, then wash.
- Method 2: Mix vinegar & baking soda. Scrub. Let it act overnight.

14. Make dishes and cutlery shiny again

Place dishes or cutlery in large container. Add equal parts vinegar and water to cover. Add 1 peeled potato… for good measure. Let sit. Rinse. Wipe.

15. Silverware

- Method 1: Line a pan with tinfoil. Place silverware in pan. Add ½ cup salt and ½ cup water. Let sit overnight.
  Method 2: Place silverware in larger container. Add warm water and black soap (1 tsp. per cup of water). Let soak. Wipe.
- Method 3: Make a paste out of ash and water. Polish your silverware.

16. Cloudy glass

Soak glasses in vinegar. Let sit for at least 1 hour. Scrub and wipe.

17. Faded copper objects

Ingredients:

- 2 tbsp. lemon juice
- 2 tbsp. vinegar
- handful of coarse salt

Mix the ingredients together and use this to clean copper objects with a toothbrush. Rinse.

18. Water boiler

Cover the affected portion of the water boiler with vinegar. Let sit 1 hour. Turn on boiler (optional). Rinse with water.

19. Blender

Put a dash of dishwashing soap in the dirty blender as soon as you're done using it, and turn the blender on high. If you use vegan ingredients, no need to use soap.

20. Sponge maintenance

- Method 1: Place in microwave in four 30 second intervals ONLY if your sponge is free of synthetics and untreated. Not recommended for luffa sponges.
- Method 2: Boil sponge
- Method 3: Mix ½ cup of baking soda with 3 tbsp of vinegar in 1 L of hot water. Let the sponges soak for 1 hour. Do this weekly.
- Method 4: Run the sponge through a cycle in the washing machine or dishwasher.

21. Sponge mildew prevention

Store sponge away from water. Use a large binder clip to hold it up to prevent mildew.

22. Microwave

- Method 1: Put 1 part vinegar, 1 part water in a bowl. Heat for 3 mins. This will loosen up debris to make cleaning easier.
- Method 2: Put the juice of 1 lemon in a bowl. Heat for 3 mins. Clean.

23. Smelly Oven

To cut grease and smell, cut a lemon into 4 pieces. Put it in a pot with water at 400°F. The vapor/steam will make your house smell good and cleanse the oven walls.

24. Dirty Oven

To clean: Sprinkle baking soda in the oven and vaporize the area with water. Let it sit overnight. The next day, add coarse salt, scrub it with a brush. Rinse well.

25. Clogged Sink

- Method 1: Put 1 tbsp. of baking soda and 1 tbsp. of salt in. Follow with boiling mix of vinegar and water (1:1).
- Method 2: Could the clog be due to hair? Try using an auger.

26. Regular Plumbing Maintenance

Pour 2-3 tbsp. of washing soda down the sink. Let it act several hours on the organic matter. Then pour 1L boiling water.

27. Enamel Sink

Sprinkle baking soda on a humid sponge and scrub the sink. Rinse.

28. Garbage disposal: clean & deodorize

- Method 1: Put ½ cup of baking soda down the disposal. Add 1 cup of white vinegar. Pour boiling water down the drain. Fill drain with ice and add 1 cup of rock salt. Run cold water. Turn on garbage disposal until ice is gone. This will loosen grime. Cut lemon in half. Run water, turn on garbage disposal. Add lemon halves one at a time. Lemons will clean & deodorize.
- Method 2: Put humid coffee grounds down the drain. Follow with 1 L boiling water.

29. Stinky kitchen while cooking

- Method 1: Cooking fish? Boil cloves & cinnamon on stovetop while cooking.
- Method 2: Put lemon zest in oven after baking your fish, while it's still hot. The scent will spread.

30. Smelly kitchen

Boil vinegar and water in a pan, leave the pan out for 1 hr. in the middle of the room (add lemon/orange peels – optional).

31. Smelly trashcan

Put newspaper at the bottom of your garbage or recycling bag to absorb smells and leaks (you can also sprinkle baking soda).

32. Smelly fridge

Put baking soda in a small bowl in the fridge. Refresh every 2 weeks.

33. Clean fridge

Disinfect your fridge with lemon juice on moist sponge.

34. Unsealed wood floors

Apply linseed or jojoba oil with a cotton mop. Let sit 1 hour, then mop with a barely damp mop.

35. Ceramic tile floors

Mop with a vinegar and water mix (1:1).

36. Grill

- Method 1: Remove plaques. Fill small container with vegetable oil. Slice potato into "grip-able" pieces. Apply coat of oil on grates. Sprinkle coarse salt. Apply potato!
- Method 2: Apply damp towels right after cooking or cut an onion in half and rub it on the plaques while still warm.
- Method 3: Clean with washing soda.

REMINDER

- Do NOT use baking soda on aluminum cookware, to avoid staining.
- Do NOT use vinegar on marble countertops, limestone, or varnished surfaces, to avoid ruining them.

Discouraging pests

#1 tip? The best way to avoid pests in your kitchen is prevention. Don't encourage their presence by leaving food sitting out.

Diatomaceous earth can be used as an insecticide and anti-parasite. Make sure not to inhale any and to purchase earth that is free of crystalline silica. Details in chapter 6.

Insects

Many types of insects will be discouraged by rose geranium, lemongrass, eucalyptus and pennyroyal essential oils. Mix these oils in vinegar and water and spray them along areas where insects travel.

Ants

Ants will be repelled by peppermint, cinnamon and cayenne essential oils. Spray these oils along the paths they travel on.

Fruit flies

You may want to skip this one if you prefer to spare the lives of fruit flies. If you have a fruit fly infestation, put out small shot glasses of apple cider vinegar and add some homemade dishwashing soap. Stir. The fruit flies will be attracted to the smell, will get stuck, and drown.

Flies

Flies dislike basil. Spray basil essential oil in the areas they hang around. Or better yet, keep basil plants in your kitchen to discourage flies from sticking around. And enjoy the basil while you're at it!

Aphids

Aphids, in particular, dislike tea tree, lemongrass, eucalyptus, cinnamon and clove essential oils. Use these oils to discourage their presence.

Cockroaches

Cockroaches are a tougher problem to solve. You can sprinkle Epsom salts in the areas that they travel along to discourage them from frequenting those places.

Kitchen Cleaning Tips:

Handwashing dishes

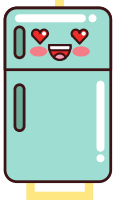
When handwashing dishes, use 2 cleaning tubs. You can add some vinegar in the rinsing tub to reduce spotting. Glasses should be cleaned first, and greasy pots and pans last. Air-dry everything except for glasses if you want to avoid spotting.

Dishwasher

Only run the dishwasher once it's full to conserve water.

Organizing your fridge

- Place fresher food in the back of your fridge and older food towards the front. This helps to reduce food waste.
- Sort through your fridge weekly!



Beware of food-borne pathogens

If you prepare meat at home, use a separate wood cutting board specifically for meat.

Rinsing off pesticides

Non-organic produce can be rinsed prior to consumption in a baking soda bath.

De-clutter

Consider minimizing in your kitchen. Are there appliances, dishes, or other items that you haven't made use of in years? Donate them and clear your space!

Minimize waste

- Ditch the disposable paper towels, switch to reusable rags
- Reduce your food waste, compost your leftovers instead

Kitchen Supplies Checklist:

Gear:

Basics

- Mop ☐
- Broom & pail ☐
- Vacuum cleaner ☐
- Extendable duster ☐

Kitchen-specific

- Rags (instead of paper towels) ☐
- Toothbrush ☐
- Gloves ☐
- Pan scraper ☐
- Luffa sponge (scratchy) ☐
- Tawashi sponge (or cellulose based sponge) ☐

Homemade Products:

- Kitchen surfaces cleaner ☐
- Dishwashing soap ☐
- Dishwasher soap ☐

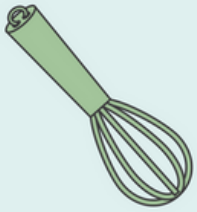
KITCHEN CLEANING CALENDAR

1. DAILY:

- Wash dishes or place in dishwasher
- Wipe down surfaces
- Clean the sink (prevent blockages by removing food bits)
- Clean messes immediately
- Consider sweeping the floor (especially if you have a messy toddler)

2. WEEKLY:

- Sanitize sponges & rags
- Vacuum and mop floor
- Sort through the fridge to compost old food
- Take out recycling (& any trash)
- Aerate the kitchen
- Wash drying racks
- Wash stovetop burners
- Wash oven racks
- Wipe out coffee grinder
- Clean the microwave



3. MONTHLY:

- Clean the fridge
- Clean the oven
- Clean the kitchen hood
- Clean the greasy walls around the stovetop
- Clean the water boiler, blender, toaster oven, and other appliances
- Maintain the drain(s) with washing soda
- Check sponges, renew if necessary
- Check cleaning supply essentials: do you need to make more?
- Dust the kitchen walls

4. BI-MONTHLY

- Dust the chairs
- Wipe the cupboards
- Dust the lights
- Clean unsealed wood floors

HOMEPLAY

This chapter had a lot of information! Let's break down what aspects of it you can tackle, one by one:

- Make your 2 or 3 cleaning cabinet essentials (consider inviting a friend along!) ☐
- Go over your kitchen supplies checklist ☐
- Consider printing or writing down your kitchen cleaning calendar ☐
- Keep this workbook handy in case you ever need to use the tricks or more recipes ☐

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 12

LAUNDRY ROOM

Let's move on to the laundry room! Using products that are eco-friendly protects local water supplies and protects us from being exposed to toxic chemicals on our clothing. But if we aren't using harsh chemicals, then how do we wash our clothes effectively, keep them soft, remove stains from them, make sure their colors don't fade, get rid of persistent stinky smells, take care of delicate linens and maintain your washing machine? It doesn't have to be all that difficult. Let's review some basic recipes and items that you can make in bulk to have them on-hand when you need them. Then I'll share cleaning tricks for the laundry room.

Cleaning Cabinet Essentials:

1. Hamper ball*
2. Pre-treat stain remover*
3. Laundry powder (or soap nuts)
4. Whitener*
5. Fabric Softener*
6. Laundry Perfume*
7. Dryer Sheets* or
8. Wool Dryer Balls*

* these can be skipped if you want the bare minimum

1. Hamper Ball

Before sending your clothes to the washing machine, it's likely your hamper is getting stinky. Especially if you have sweaty exercise clothes thrown in the mix! You can reduce smelly odors in your hamper by crafting a hamper ball. (Tip: If you wish to make wool dryer balls too (see below), make those balls first and reuse the stockings for this hamper ball craft!)

Materials:

- Old pair of stockings
- Scissors
- Baking soda
- Essential oils (i.e. lavender)

Steps:

- Cut 9" off the stockings, starting from the foot of the stockings.
- Fill it up with baking soda, about 1/3rd of the way up.
- Add 10 drops of essential oils of your liking.
- Tie a knot to secure it.
- Place this hamper ball at the bottom of your hamper to make sure it smells fresh.

2. Pre-treat stain remover

If you stain on your shirt while you're out and about, don't wait before acting on it. Make this simple roll-on soap to apply directly to the stain to pre-treat it. Once you get home, wash your shirt in the washer with your regular laundry powder.

Ingredients & Materials:

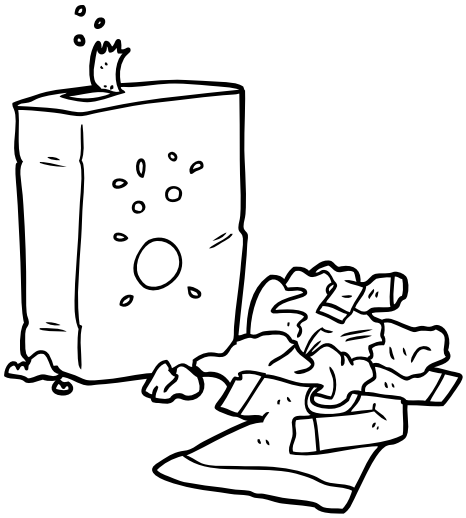
Small roll-on container (old deodorant roll-on may be hard to open, but give it a try!)
1 tbsp. Marseille soap
½ cup water
1 tsp. vegetable glycerin
Funnel

Steps:

- Put the Marseille soap and water in a pan
- Heat until soap is fully melted
- Take off the heat, add the vegetable glycerin
- Transfer the soap (with a funnel, if needed) to the roll-on container
- Let the mixture thicken for 12 hours
- Label your container

3. Laundry Powder

This laundry powder is my go-to laundry soap. It's easy to make, effective, and simple to put in the machine. Keep a ¼ cup measuring device beside the powder container to easily put one dose in the washing machine.



Ingredients & Materials:*

1 or more large sealable container(s)
Gloves
5 cups baking soda
5 cups washing soda
2.5 parts finely grated Castile bar soap
¼ cup measuring device

* for 1 year's worth (for a family of 2)

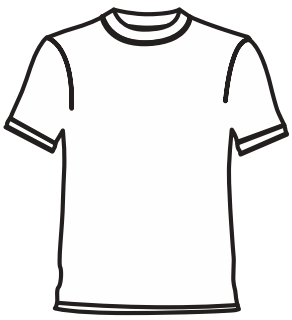
Steps:

- Put your gloves on
- Mix the baking soda, washing soda, and Castile soap together in the container(s)
- Close tightly
- Label your containers
- Store safely & keep the measuring device beside it
- Use ¼ cup (or more) per load

For more laundry cleaner recipes, scroll down.

4. Whitening clothes

To whiten white clothes, turn to sodium percarbonate instead of bleach! If you whiten clothes frequently, keep your sodium percarbonate bottle in your laundry room, label it for your personal reference, and place alongside a tbsp. measurer to easily scoop out one dose.



Materials:

Sodium percarbonate
Tbsp. measurer

Steps:

- Label the sodium percarbonate container "Whitening: 1 tbsp./ load"
- For every load of white clothes, add 1 tbsp. of sodium percarbonate

5. Fabric Softener

This fabric softener will not only soften your clothes, it will also remove odors and residual detergent, and protect the clothes' colors.

Materials:

White vinegar
Cup measurer

Steps:

- Keep a bottle of white vinegar in your laundry room
- Label it "Fabric softener: 1 cup/rinse cycle"
- Add 1 cup of vinegar in your fabric softener dispenser so that it gets released during the rinse cycle

Do not use this softener with reusable cloth diaper covers, as the plastic can be damaged.

Soap nuts can also be used as fabric softener. Add 5 nuts to a cotton bag, and place in the washing machine.

6. Laundry Perfume

If you wish to add a pleasant scent to your laundry, make a spray with the essential oils of your choice mixed in water. Whenever your laundry is done and set out to dry, or prior to wearing your clothes, lightly spray the mixture onto them. Avoid delicates and white clothes, as they may more easily get stained. The scent will be discreet, not overwhelming. Since the oils are volatile, the scent will only be temporary – make sure to seal the perfume bottle properly.

Materials:

Spray bottle (15 oz)
Lavender essential oils

Steps:

- Fill bottle with water
- Add 40 drops of essential oils
- Seal properly and label
- Spray clothes prior to wearing

7. Dryer Sheets

Fabric softeners and dryer sheets contain so many harmful chemicals that the Environmental Working Group's official recommendation is to refrain from using them altogether. When you dry your clothes with them, they leave a layer of quaternary ammonium compounds (1) or "quats". Quats can result in skin and respiratory irritation, have been linked to occupational asthma (2), and were found to significantly reduce fertility in mice (3). The sheets and softeners are also made with fragrance, a term under which hides a trademark secret with ingredients such as phthalates and synthetic musks (suspected hormone disrupters), 1,4-dioxane (carcinogen), linalool (allergen), chloromethane (developmental toxicant), and many more toxic chemicals (read the 2008 University of Washington study here).

(1)Environmental Working Group, "What about fabric softeners?", accessed July 2018, URL: https://www.ewg.org/guides/cleaners/content/faq#q32
(2)"Quaternary ammonium compounds--new occupational hazards", Lipińska-Ojrzanowska A et al., 2014m URL: https://www.ncbi.nlm.nih.gov/pubmed/25812396
(3)"Exposure to common quaternary ammonium disinfectants decreases fertility in mice", Melin et al., 2014, URL: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4260154/

Thankfully, it's quite easy to make your own dryer sheets or dryer balls that are toxic-free and effective. If you air-dry your clothes (kudos to you!), this next craft won't apply to you. If you do use a dryer, you might want to make reusable dryer sheets to soften your clothes, add a pleasant smell to them, and reduce static cling.

Materials:

Large jar
2 cups of vinegar
60 drops of essential oils
3 to 6 sheets of old (clean) cotton rags or washcloths

Steps:

- Mix the vinegar and essential oils in the jar
- Put the sheets down into the vinegar (as many as will comfortably fit)
- Label the container and store safely
- Place them in the dryer with your wet clothes (use all the sheets for larger loads, fewer sheets for smaller loads)
- Remove sheets from laundry and put them back in the jar to use next time

Place soap nuts in your dryer to make your clothes soft and fluffy.

8. Wool dryer balls

There is one function that our dryer sheets lack, and that's reducing drying time. To shorten drying time, you can felt your own wool dryer balls (or just buy them, but we're crafty!). We recommend steering clear of plastic dryer balls, as they often contain polyvinyl chloride (PVC), which is made from vinyl chloride (a known carcinogen). Other than PVC's link to cancer, its production and disposal also has many environmental concerns.

Wool dryer balls are excellent alternatives to both plastic dryer balls and dryer sheets in that they are nontoxic, reusable, made from a renewable resource, and have no negative environmental impact. These wool dryer balls:

1) reduce static cling,
2) soften clothes and avoid crinkles through their pummeling action,
3) naturally scent your laundry if you add drops of essential oils to them, and best of all,
4) they reduce the drying time!

How so? They increase airflow by creating air pockets as they tumble, and they pull moisture from clothes. They contain naturally secreted grease called lanolin that has a waterproofing property, which ensures that the wool balls don't retain water or become moldy.

Here's what you'll need to make your wool dryer balls. To reduce drying time, we recommend making anywhere from 4 to 6 balls.

Materials:

- 100% wool yarn (about 50 yards for 1 wool dryer ball).
  - The yarn MUST be 100% wool without any acrylic or else it will not felt.
  - White or grey color to ensure it doesn't stain your clothes (I used red because I mainly use these for drying cloth diapers or towels).
  - Must NOT say "machine washable". Look instead for "felting wool for washing machine felting".
- Pantyhose or stockings (that you won't be wearing again)
- Blunt-tip needle
- Scissors
- String

Steps:

1. Wrap the yarn around your index and middle finger 10 times, leaving a small space between your fingers.
2. Slide the yarn off your fingers, squeezing the yarn in the middle so it doesn't come loose. Wrap more yarn around the middle of your bundle 10 times to hold it together.

3. Continue tightly wrapping the yarn around and around to begin forming a ball. Keep going until you've used up about 50 yards of wool, or until it reaches the size of a tennis ball.
4. To secure the final strand of yarn, thread the strand through your blunt-tip needle and wedge it tightly under other strands. Cut the excess yarn end.
5. Slide the wool dryer balls in your pantyhose or stockings. Use your string to tie tightly between each dryer ball. (Cut stockings if necessary.)
6. Wash your dryer balls on high heat with your load of laundry. (Make sure to not wash clothes on high heat that will shrink – or that you're concerned about staining if you used colorful yarn! Best to use cloth diapers, rags or towels.)
7. Dry the wool dryer balls on high heat.

Release your wool dryer balls from the stockings and make sure the balls have felted. The wool strands should all be stuck together smoothly and securely. If not, repeat the washing and drying. You can use the leftover stockings to make your deodorizing hamper ball with baking soda and essential oils!

To use: put 4-6 balls in your dryer.

If the balls begin falling apart, repeat the felting process. For scented laundry, add several drops of essential oils (such as lavender) to each ball right before using them.

Other cleaning recipes & tricks

1. Plant-based Laundry Cleaners

To wash your clothes, you can use plants that are rich in saponin. Saponin is a surfactant and foaming substance that's effective at lifting grease, dirt and grime from clothing.

1.1. Soap Nuts

Soap nuts from the Sapindus Mukorossi tree are rich in saponin (refer to chapter 5 for details). Using them will leave your laundry smelling clean and fresh. These dried fruits can also act as fabric softener or be used in your dryer to soften clothes. They aren't ideal for filthy or very stained laundry, but they work well for clothes that need to be freshened up. If you have very dirty laundry, you can throw in some baking soda, and if you are washing whites, you can add sodium percarbonate.

To use: Place about 5 nuts in a cotton bag, and put it in with your clothes in the washing machine.

1.2. English Ivy Laundry Detergent

English ivy (Hedera helix) is rich in saponin (see chapter 5 for details) and makes a perfect zero waste & local laundry detergent. Its leaves are available year-round. It's not the most practical recipe, but probably the most fun! Since it doesn't keep for that long, you would need to remake the recipe every 6 weeks or so.

Materials:

- Gloves
- 60 large English ivy (Hedera helix) leaves. WARNING: Always be 100% of your plant identification prior to harvesting!
- Clippers
- Foraging basket
- Reusable tea filter or very fine strainer (or single-use coffee filter, if that's all you have)
- Large jar

Steps:

- Find a Hedera helix plant
- Put your protective gloves on (dermal sensitivities are rare, but best to be cautious.)

- Once 100% sure of your identification, collect 60 leaves while avoiding the berries and sap.
- Rinse the leaves.
- Scrunch them up in your hands – with gloves on – to break them down.
- Transfer to pan, add 4.5 cups of water
- Bring water to a boil; boil for 15 min.
- Let cool and sit for about 12 hours.
- Squeeze the leaves by hand (with gloves) to get their last juices out
- Compost the leaves
- Filter the English ivy liquid into a large jar
- Label very clearly and refrigerate.
- Add vinegar to extend its shelf-life. Keeps for about one month in the fridge.

To use: Add ¾ cups of the English ivy tea to each load of laundry. Makes enough for 6 loads of laundry.

Want a quicker solution? Put 12-15 leaves in a mesh bag and place directly in the washing machine with your laundry. While we can't attest to the efficiency of this particular method, it has reportedly worked for our friends! Note that the English ivy tea can also be used as dishwasher liquid.

1.3. Wood Ash Laundry Cleaner

Hardwood ash is high in potash, or potassium carbonate, which is sometimes used in soap production. The potash is effective at cleaning clothes and most stains. (Read more in chapter 5.) This ash detergent cleans most clothes well, but it's not ideal over the long term for white clothes, because their colors will fade.

Materials:

- Gloves
- Hardwood ash (a lot)
- Tub to collect ash
- Sieve
- Large bowl
- Water
- Reusable tea filter or very fine strainer (or single-use coffee filter, if that's all you have)
- Large jar

Steps:

- Put protective gloves on (to avoid potential skin irritation)
- Collect ash in large tub. WARNING: Don't burn yourself. Ash can look deceivingly cool. It can actually remain hot for over 12 hours after a fire goes out.

- Sift ash into a large bowl until you've collected 4 cups of sifted ash.
- Add 9 cups of water. Mix.
- Let it steep for 24 hours, mixing occasionally if possible.
- Filter the ash water into a large jar.
- Label the jar before placing in the fridge.
- The liquid will keep for several months in the fridge

To use:

Use ¾ cup to 1 cup per load of laundry

We've gone over your laundry room cleaning cabinet essentials, as well as some unique off-grid style laundry cleaners. Here are more recipes and tricks to complete your laundry room needs!

2. Liquid Laundry Soap

This laundry soap works well but doesn't store very nicely. Over time, the mixture gels together. If this happens, add hot water and mix the container vigorously.

Materials:

2 cups of grated Marseille soap
1 tbsp of baking soda
1 tbsp of sodium percabonate (for white laundry only)
20 drops of your choice of essential oils
1 quart (1 L) of water

Steps:

- Boil water with shaved Marseille soap until it melts.
- Let it cool
- Add baking soda, sodium percarbonate (optional, for whites) and essential oils.
- Transfer to large container

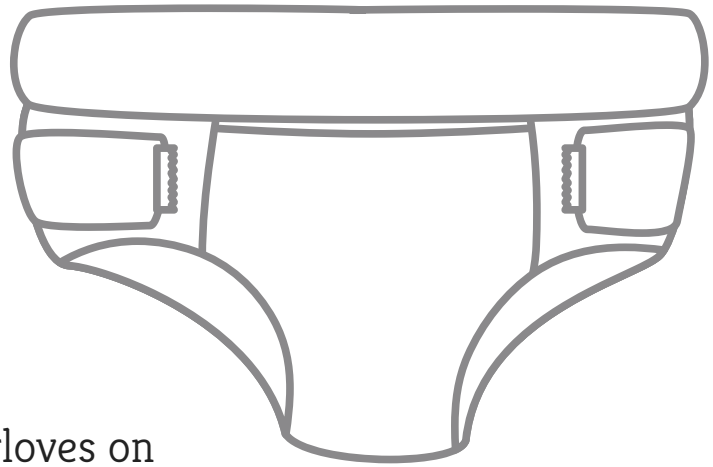
To use: Add ¼ cup to ½ cup per load.

3. Cloth Diaper Laundry Cleaner

This cloth diaper cleaner recipe prevents build-up and is an extra-strong sanitizer. Do not use it on your regular clothes. Cloth diapers must be washed on high heat.

Ingredients & Materials:

Gloves
Baking soda, 3 parts
Washing soda, 3 parts
Sodium percarbonate, 2 parts



Steps:

- Mix all 3 ingredients, with gloves on
- Use 2 tbsp. for one large load

Note that cloth diapers should not be washed with soap, or the oils in the soap will lead to build-up on the fabric. This coating will in turn make the diapers less absorptive. Cloth diapers should not be washed with vinegar either, or the plastic covers will begin breaking down, making them less water-resistant. Finally, essential oils should never be used with cloth diapers, as the oils will coat the fabric and make them less absorptive over time.

Never put your all-in-one cloth diapers or cloth diaper covers in the dryer, as this will weaken the plastic, leading to diapers that are more likely to leak. Hang dry them instead, indoors or in the sun.

4. Homemade "Bleach"

This homemade "bleach" is meant for cotton fabric that has discolored to yellow. For regular whitening instead, just use 1 tbsp. of sodium percarbonate in your laundry machine.

Ingredients:
2 tbsp. sodium percarbonate
1 tbsp. grated Marseille soap
Small tub or sink

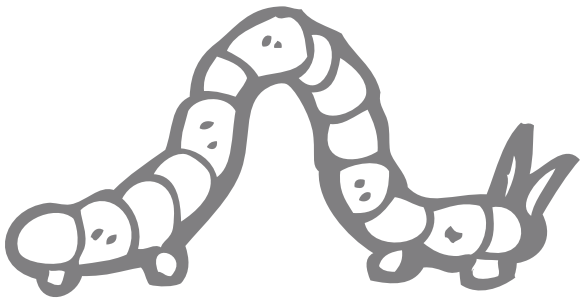
Steps:

- Pour 105°F water in the tub or sink
- Add the sodium percarbonate and Marseille soap
- Add yellowish clothing and mix
- Let sit a couple hours

5. Silk Clothes Cleaner

Silk clothing should be washed carefully by hand, not the washing machine.

Ingredients & materials:
2 parts honey
1 part black soap
8 parts water
soft brush



Steps:

- Melt honey and black soap in water in a pan
- Mix and let cool
- Apply soap to the silk and clean silk with a soft brush
- Air dry

6. Whitening

To whiten faded clothes, you can soak them in water overnight with 1 cup of fresh lemon juice.

7. Faded black clothing

These methods don't yield fantastic results, but they do help.

- Method 1: To revive the colors of your black clothes and darken them, make English ivy tea and let your black clothes bathe in the tea for 12 hours. Rinse with vinegar.
- Method 2: Mix coffee grounds and water. Bathe your black clothes in the liquid for 12 hours. Rinse with vinegar.

8. Ever-stinky clothing

- Method 1: Soak the clothing in water/vinegar (1:1) or water/baking soda (1:4) overnight.
- Method 2: Place the piece of clothing in the freezer or in the bright hot sunshine.
- Method 3: Soak in vinegar 24h, then 1 day in the bright hot sun.

9. Cleaning wool and cashmere

Wool clothing should be washed by hand in cold water with grated Marseille soap and vinegar. Rinse the wool with water, then do one final rinse with vinegar. Squeeze out by using ringing it in a towel. Stretch it to restore it to its original shape and size. Hang to dry.

10. Pilling on sweater

Use a razor to remove unwanted fabric from sweaters or scarfs.

11. Prevent pilling

To prevent pilling on sweaters or sports clothes, wash them inside out.

12. Kitchen rags

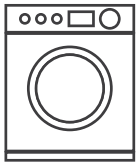
Soak kitchen rags with Castile soap & baking soda overnight. Wash next day.

13. Washing socks or small children's toys

Place socks & toys in mesh bag. Transfer to washing machine. It's an efficient way to clean without losing items or wasting time.

14. Washing Machine Maintenance

- Method 1: Put 4 tsp. of baking soda in with your regular laundry load before starting the cycle
- Method 2: Put 1 L of vinegar in your washing machine and run it on a short cycle 3 times a year



15. Limescale on Ironing Board

Scrub ironing board plate with half a lemon. If your ironing board doesn't have holes in it, add salt. Rinse with a sponge.

16. TREATING STAINS

All stains should be treated as soon as possible to prevent the stain from setting in. Stains that are not water-soluble may not be able to be treated with a safe cleaning product. For instance, ink from a ball-point pen may only be able to be removed with acetone or rubbing alcohol. Other stains on leather, suede or silk may require professional treatment. We recommend getting creative to cover these stains (like Phoebe from Friends, stylishly covering her hummus stain with a Christmas ribbon).

Stain tips:

- Act immediately!
- Blot, don't rub.
- Use cold water
- Treat stains before washing in machine

TREATING STAINS

a. General stain remover for resistant stains on clothing

- Method 1: Gently rub humidified Marseille soap on dry clothes before washing them
- Method 2: Soak stained shirt in warm water overnight with grated Marseille soap

b. Deodorant stains

Deodorant stains will come off easily by wiping them with pantyhose.

c. Sweat marks

Apply a baking soda & water paste (3:1 ratio) to the sweat marks. Wash the piece of clothing as usual in the washing machine. This works for stains on the neck or wrists of shirts.

d. Blood stain

Never wash blood stains with hot water. Use cool water with Marseille soap and/or lemon juice. Tougher blood stains can also be treated with washing soda – wear gloves!

e. Grease stain

- Method 1: Sprinkle cornstarch on the grease stain to absorb grease. Let it act for about 5 minutes. Rinse. No more grease. Rub the piece of clothing with humidified Marseille soap bar to remove the remainder of the stain.
- Method 2: Sprinkle talc-free baby powder on the grease stain. Put a napkin on top. Iron it. Rinse.

f. Wine stain

Immediately sprinkle salt on top of the stain to absorb the wine. Then spray with warm water. Scrub with toothbrush.

g. Grass stain

Pre-treat with vinegar or lemon juice. You can also cut half a potato and rub with the potato. Then, wash with cool water and Marseille soap.

h. Coffee or tea stain

Pour some vinegar & sprinkle some salt on the stain. Take a piece of cloth to scrub the stain.

i. Red berries stain

Blot the stain with half a lemon. Let it take action, the rinse.

j. Chewing gum stain

Harden the piece of gum by applying an ice cube to it, or putting the clothing in your freezer. Scrape it off with a spoon or dull knife. Then clean the remaining marks with vinegar.

k. Countertop stain

Rub stain with lemon juice. Leave juice on for a few min. Scrub with baking soda. Tada!

l. Wax stain

Harden the piece of wax by applying an ice cube to it, or putting the clothing in your freezer. Scrape it off with a spoon or dull knife. If there is any remaining wax, place a paper napkin or bag on top of the stain. Place an iron on the stain so that the wax melts into the paper. Treat the rest of the stain with Marseille soap and water.

m. Rust stain

Rust stains can be tough to get rid of. But with the right ingredients and some elbow grease, it's possible. Mix lemon juice and salt. Scrub the stain. Let act for 30 mins. Scrub with Marseille soap. Rinse.

n. Paint stain

For paint stains on tiles or pavement, scrub the stain with a hard brush and wood ash.

Laundry Cleaning Tips:

- Is your laundry actually dirty? Your jeans can be worn many times before being washed, and shirts can be worn more than once before being cleaned (*gasp!*). A smell test and stain check will help you make a decision.
- Keep separate hampers for:

  - Cloth diapers and/or cloth pads
  - Delicates that must be hand-washed
  - Clothes that leak colors
  - Whites

- To make sure your clothes last: Wash clothes on cold (except whites + diapers). Cold rinse cycles for all clothing.
- Cold washing prevents clothes from shrinking excessively.
- Turn sports clothes and sweaters inside out to prevent pilling.
- Select short cleaning cycle unless you have particularly filthy clothing.
- Air dry whenever possible indoors or outdoors in the sun.
- Use the dryer on low heat and clean the lint trap filter after every use to ensure energy efficiency.
- Soiled cloth diapers should never go more than 5 days without being cleaned. (In our household, I've sometimes gone 7 days, and no one has died.)
- Some of your clothes may require dry cleaning. Dry cleaners often use perchlorethylene (PCE), which can damage the nervous system, irritate your skin, eyes and lungs, and is a suspected carcinogen. The best solution? Skip dry-cleaning altogether. If you must, look for dry cleaners that are PCE-free. This won't mean that they are free of toxic chemicals, however. Make sure to let your clothes air out thoroughly outdoors before wearing them. Never let dry-cleaned clothes sit around in your car or home before airing them out.

Laundry Room Gear Checklist

Supplies:

- Hampers ☐
- Drying rack ☐
- Iron ☐
- Toothbrush (for stains) ☐

Homemade Products:

Hamper ball ☐
Pre-treat stain remover ☐
Choose 1 laundry cleaner: ☐
- Laundry powder + ¼ cup measuring device
- Soap nuts + cotton baggie
- English ivy detergent
- Wood ash cleaner
- Liquid cleaner

Cloth diaper laundry cleaner ☐
Whitening (Sodium percarbonate, labeled) + tbsp. measurer ☐
Fabric softener + cup measurer ☐
Laundry perfume ☐
Dryer sheets OR dryer balls ☐

LAUNDRY ROOM CLEANING CALENDAR

1. DAILY:

- Act on stains immediately
- Sort dirty laundry in separate hampers

2. WEEKLY:

- Clean cloth diapers (don't let soiled diapers sit out more than 5 days)
- Wash laundry with any kitchen rags + cloth pads
- Clean out dryer lint trap

3. BIWEEKLY:

- Wash towels and sheets
- Hand-wash delicates

4. MONTHLY:

- Wash or shake out bedding
- Wash kitchen and bathroom rugs
- Check cleaning supplies

5. BI-ANNUALLY:

- Washing machine maintenance 1-3 times per year

HOMEPLAY

You are well on your way to having clean toxic-free clothes to wear and safe sheets to sleep in! Here is a list to help you put into practice what you've learned in this chapter:

- Determine which laundry cleaner you would rather use (DIY, soap nuts, or foraged) ☐
- Make your 7 cleaning cabinet essentials (consider inviting a friend along!) ☐
- Go over your laundry supplies checklist ☐
- Consider printing or writing down your laundry cleaning calendar ☐
- Keep this book handy in case you ever need to use the tricks or more recipes ☐

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 13

BATHROOM

The bathroom is our comfort station. However, if we aren't careful, this room can get a lot of unpleasant odors and the humidity from hot showers can result in mold and mildew growth and harbor bacteria. Our bathroom doesn't need to be sterile to be safe and pleasant. With some simple habits and basic products, it can be cleaned effectively and efficiently.

Bathroom Cleaning Cabinet Essentials:

1. Daily Shower Spray
2. Fighting Mildew
3. Mold-fighting mix*
4. Scouring paste
5. Toilet fizzies*
6. Toilet cleaner
7. Beeswax candle or essential oils diffuser*

* these can be skipped

1. Daily Shower Spray

Preventing a problem in the bathroom is always easier than addressing one. After each shower, aerate your bathroom appropriately: spray down your shower walls or curtains with the daily shower spray, leave the shower curtains or door open, and turn on the bathroom fan and/or open the window. By increasing air circulation and letting hot humid air escape, mildew and mold build-up is much less likely to occur.

The daily shower spray will prevent mold and will also deodorize your bathroom by neutralizing unpleasant smells.

How to make it:

- Pour vinegar into a 32oz spray bottle
- Label it

To use:

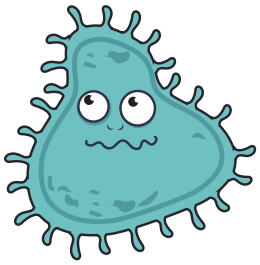
- Spray down shower walls after every use

2. Fighting Mildew

The next items you want to keep on hand in your bathroom are a sponge and either vinegar or baking soda. You want these products readily available, so that the moment you spot mildew in your bathroom, you can act on it immediately.

Keep in your Bathroom:

Baking soda or vinegar
Sponge



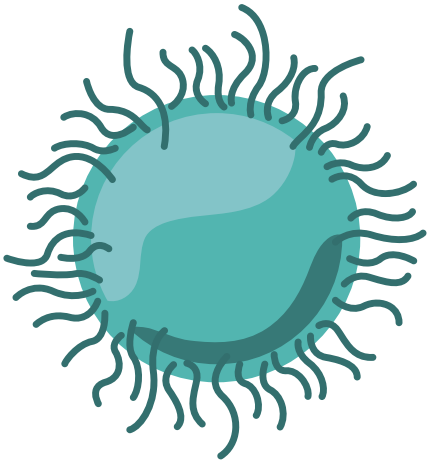
To Use:

- Simply soak the sponge in vinegar or humidify the sponge with water and sprinkle baking soda on it
- Scrub areas that are beginning to form mildew.

3. Mold-fighting Mix

If you have a tougher mold problem already between the joints of your tiles, you're going to need a mold-fighting mix. This is a mix you won't be making in advance, but rather to address an acute problem.

WARNING: In this recipe, we use hot water to mix the sodium percarbonate. Because of this, there will be sodium percarbonate fumes in the air. You may find that it irritates you nose and throat or causes you to cough. While this will not cause chronic symptoms, it can be unpleasant to work with. If you have existing respiratory problems, you may want to skip this recipe. Keep small children in another room.



Ingredients & Materials:

3 tbsp. of sodium percarbonate
20 drops of essential oils: tea tree, eucalyptus, clove or cinnamon
¾ cups hot water
Funnel
32oz spray bottle

Steps:

- Use a funnel to transfer these ingredients to a spray bottle.
- Do NOT fill it all the way up, because the liquid will form bubbles and rise up quickly!
- Do not shake
- Use immediately by spraying the mix on moldy joints
- Let the solution act for several hours
- Scrub with toothbrush or a scrubbing brush
- Rinse

4. Scouring Paste

Make a scouring paste to scrub your bathtub and sink every other week or so, as needed. Make this paste right before you need it, or in advance. No black soap? Use liquid Castile soap instead.

Ingredients:

4 parts of baking soda
1 part of black soap

To use:

Scrub your bathtub and sink with an old toothbrush or scrub brush

5. Toilet Fizzies

If you have composting toilets, this product won't apply to you. You've gone and outdone all of us and you're amazing.

For the rest of us flush-toilet users, I recommend making a large supply of toilet fizzies (or "toilet bombs", but fizzies sounds more pacifist). Whereas a toilet cleaner is meant for deep cleansing, the toilet fizzies are meant for regular maintenance between these deep cleanses.

Ingredients & Materials*:

Gloves (because citric acid can cause skin irritation)
1 part baking soda*
1 part citric acid*
1 part cornstarch*
Gallon-size sealable food bag
Spray bottle with water
Essential oils (of your liking)
Mold: tablespoon measurer or your hands!
Sealable jar

* Making enough for a year? Use 2.5 cups of each of these ingredients. I'd start with a small batch first to make sure you've got the hang of it.

Steps:

- Place baking soda, citric acid and cornstarch in the sealable bag
- Close the bag and massage the powdery mix together to combine the 3 ingredients
- Once it's mixed, open the bag and spray a bit of water in it.
- Seal the bag again and massage the mix for 15 seconds or so.
- Open your bag back up to release carbon dioxide build-up. (Failing to do so will result in a room full of powder, and potentially citric acid on your face – bad news.)
- Spray more water inside it and massage it again.
- Repeat these steps until the powder mixture is more of a clump.
- Once your mix is ready, make small balls in your hand or use a tablespoon measurer to help mold half-balls.
- Let the toilet fizzies dry
- Transfer them a sealed jar by your toilet.
- Pop a toilet fizzy in to maintain your toilet fresh between deep cleanings.

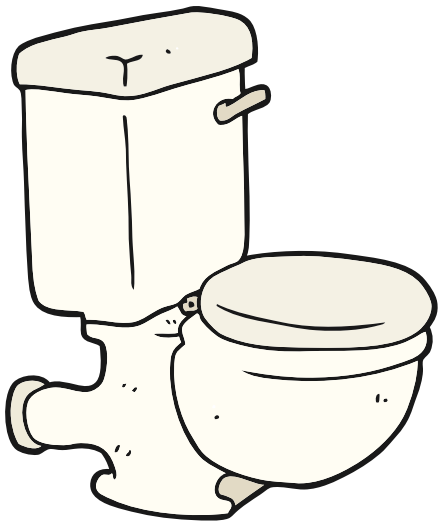
- Repeat these steps until the powder mixture is more of a clump.
- Once your mix is ready, make small balls in your hand or use a tablespoon measurer to help mold half-balls.
- Let the toilet fizzies dry
- Transfer them a sealed jar by your toilet.
- Pop a toilet fizzy in to maintain your toilet fresh between deep cleanings.

6. Toilet cleaner

For this recipe, you'll ideally want to reuse an old toilet-bowl-cleaning container. It'll ensure that your cleaning product goes exactly in those hard-to-reach places in your toilet bowl. If you don't have one, you can use a spray bottle, but it's not ideal. Make sure to get the product under the rim!

Ingredients & Materials*:

1 quart warm water
1 tbsp. black soap
20 drops of eucalyptus essential oils
Funnel
Clean toilet-bowl cleaning container

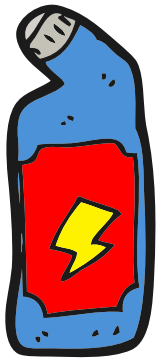


* this quantity will last about 2 months.

Steps:

- Mix all the ingredients together

- Transfer with funnel to your container(s)
- Close and shake vigorously



To use:

- Apply soap to toilet bowl
- Let sit 20 minutes
- Scrub the bowl with a toilet brush
- Flush

7. Beeswax candle

I enjoy keeping a nontoxic beeswax candle in the bathroom. Whenever the bathroom smell is less than pleasant, light it. You can even blow it out immediately: the smoke will mask unpleasant odors.

8. Essential oils diffuser

Keep an essential oils diffuser in your bathroom to mask unwanted odors. Add the aroma of your choice for an inviting bathroom. Remember, essential oils emit volatile organic compounds, so make sure not to overuse them.

Those are the bathroom cleaning cabinet essentials that you'll want to make in bulk. Up next, more recipes and tricks to sanitize the bathroom.

Other cleaning recipes & tricks

Deodorize Bathroom

Place baking soda in a small bowl in your bathroom with drops of mint or Scots pine essential oils.

Rusty Showerhead

Fill a Ziplock bag with vinegar. Secure it to the showerhead with rubber bands, overnight. In the morning, the rust will have fallen off in the water. Scrub the rest off with a sponge.

Shower curtain

Clean the shower curtain every 3 months in the washing machine with 3 tsp. of baking soda

Hair Catcher

Prevent drain blockages in the shower by using a hair catcher such as a TubShroom.

Clogged Drain

If your bathroom drain is clogged, it's most likely due to hair. Instead of using highly toxic drain cleaners, use a reusable plumbing snake drain auger.

Moldy bathroom tile joints

- Method 1: Mold-fighting mix described above
- Method 2: Dissolve washing soda in hot water. Apply the mix with a toothbrush.

Toilet Brush Dripping Hack

To prevent mold in the toilet brush holder, let the toilet brush drip dry under the toilet lid after use.

Toilet Brush Maintenance

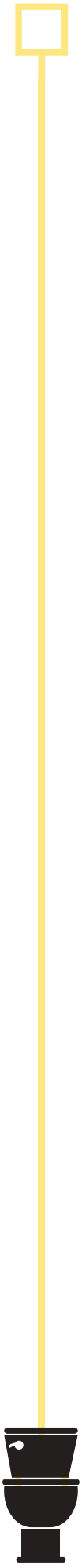
Prevent smells & mildew from forming in the toilet brush holder by putting toilet bowl cleaner in the bottom of it.

Prevent rust marks

Bathroom sinks are prone to rust marks. Before ditching your last container of toxic transparent nail polish (ha!), put some nail polish (or tape) at the bottom of metallic containers that sit near the sink.

Remove rust stains

Rust stains can be tough to get rid of. But with the right ingredients and some elbow grease, it's possible. Mix lemon juice and salt. Scrub the stain. Let act for 30 mins. Scrub with Marseille soap. Rinse.



Prevent lime scale buildup

To prevent limescale build-up on your sink, take a lemon quarter and use it as a sponge along your sink.

Wash Bathroom Tiles

To wash the bathroom wall tiles, dilute 2-3 tbsp. of black soap in 5L of warm water. Wash the tiles with a sponge and gloves.

Bathroom Cleaning Tips:

- Flush the toilet with the lid closed! It's more sanitary and will bring less humidity into the bathroom.

- Check for leaky pipes or sweaty toilets. Fix leaky faucets and use a fan in the meantime to prevent mold.

- Consider using a bidet instead of toilet paper! Attachments are available and many are quite easy to install. It reduces toilet paper use (which in turn reduces water use!) and is more sanitary.

Bathroom Cleaning Gear Checklist:

Supplies:

- [ ] Toilet brush
- [ ] Plunger
- [ ] Reusable plumbing snake drain auger
- [ ] Hair catcher (TubShroom)
- [ ] Gloves
- [ ] Sponges
- [ ] Toothbrush
- [ ] Scrub brush
- [ ] Rags
- [ ] Baking soda or vinegar
- [ ] Beeswax candle
- [ ] Essential oils diffuser
- [ ] Squeegee (optional)

Homemade Products:

- [ ] Daily shower spray
- [ ] Scouring paste
- [ ] Toilet fizzies
- [ ] Toilet cleaner

BATHROOM CLEANING CALENDAR

1. DAILY:

Wipe sink
Spray shower
Aerate room
Hang towels
Address mildew/toilet bowl/drain problems as they occur

2. WEEKLY:

Clean tub & sink
Clean mirrors & windows
Sweep & mop
Toilet fizzies (mid-week)
Clean toilet bowl

3. MONTHLY:

Clean walls
Check drains
Check for mold, mildew
Organize cabinets
Check supplies
Clean shower curtain

HOMEPLAY

One more room down! You're really getting the hang of this conscious cleaning thing! Here is a recap of what you can implement next:

- Make your 7 bathroom cabinet essentials (consider inviting a friend along!) ☐
- Go over your bathroom supplies checklist ☐
- Consider printing or writing down your bathroom cleaning calendar ☐
- Keep this book handy in case you ever need to use the tricks or more recipes ☐

GREEN CLEANING

(minus the greenwashing B.S.!)

CHAPTER 14

LIVING AREAS

Your living areas are where you spend time with family and friends, socialize with guests, maybe even run a business, and lounge and recharge after a long day. Keeping those spaces inviting (and drawing the line before "hospital-clean") makes it all the more enjoyable.

These are a handful of products you can make in advance to have on hand whenever you need them, as well as some tricks that will help you clean more efficiently around your home.

Cleaning Cabinet Essentials:

1. Multi-purpose cleaner
2. Floor cleaner
3. Window cleaner
4. Wood polish*:
5. Air freshener options*:
    - Tea tree oil spray
    - Vaporizer
    - Pot-pourri

* these can be skipped

1. Multi-Purpose Cleaner

This cleaner is suitable for all surfaces except for marble and granite. It can even replace your kitchen cleaner, if you prefer it.

Ingredients:

- 1 part vinegar (1.5 cups*)
- 4 parts water (6 cups*)
- Lemon or tea tree essential oils (7 drops for 1 cup of liquid; 50 drops*)
- Two 32oz spray bottles

* for approximately 1 year's supply (family of 2)

Steps:

- Fill up your bottles with the ingredients
- Shake and label
- Seal tight and store safely

2. Floor Cleaner:

This product should not be made in advance. Prepare it right before use. The black soap is ideal for your floors because it'll make them shine.

Ingredients & Materials:

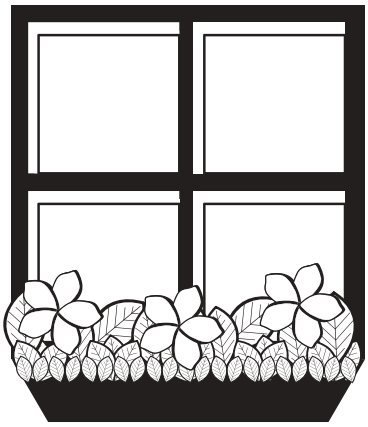
- Large bucket
- Black soap
- Water
- Mop

Steps:

- Label the black soap bottle for easy future reference: "Floor Cleaner: Use 2 tbsp. bucket of in warm water"
- Dilute 2 tbsp. of black soap in a bucket of warm water
- Use this soap with a mop

3. Window Cleaner

You'll likely want to clean your windows several times a month as well. The recipe is very easy. There are other recipes out there that call for cornstarch, but in our opinion, when it comes to windows, simpler is better.



Ingredients & Materials:

1 part vinegar
1 part water
1-2 spray bottles

To use:

Spray down your windows and use newspaper or soft cloth to clean.

Note: I mistakenly mention in the video to use microfiber cloths if you have old ones lying around. I recommend NOT to do this, because microfibers are responsible for microplastics contamination. Details in chapter 9.

4. Air Fresheners

Tea Tree Oil Spray

Put 10 drops or more of tea tree essential oils in a small spray bottle filled with water. Spray your living areas before guests arrive. Note that tea tree oil is not recommended for use around pets or young children.

Vaporizer

Use a vaporizer to bring a pleasant scent to your living areas. You can either use essential oils of your liking, or make your own liquid mix.

To make your own vaporizer mix, you'll need:

- Skins of citrus fruits
- Eucalyptus, rosemary, thyme and/or peppermint leaves
- Ice cube trays

Steps:

- Put these plants in a pan with water
- Boil for 15 minutes
- Filter
- Compost the plant material
- Use the filtered liquid in your vaporizer
- Conserve the leftovers by freezing in ice cube trays

Note: Do not overuse vaporizers. Remember that essential oils emit volatile organic compounds that can irritate your lungs. Check our safety section for more information about oils that children or pets are especially sensitive to.

Pot-Pourri

Pot-pourri is a lovely decoration to keep in your living areas and it can bring a discreet fresh smell to any room. It certainly is a fun crafts activity for children to partake in.

Ingredients & Materials:

- Aromatic plants: rose petals, lavender flowers, mint leaves, citrus skins, cedar, rosemary, etc.
- Decorative bowl
- Essential oils spray (optional)

Steps:

- Dehydrate the plant material on your car dashboard on a sunny day, in a dehydrator, or in your oven
- Place the dried pieces in a bowl
- Place in your living area
- Spray it occasionally with an essential oil and water mix

5. Wood Polish

You old wood furniture may occasionally look tired and in need of a polish. This recipe is easy to make and will last for years.

Ingredients & Materials:

- 2 tbsp. beeswax
- ½ cup olive oil
- 1 tbsp. black soap
- Pyrex cup measurer (ideally)
- Glass container

Steps:

- Melt the beeswax and olive oil in a double boiler using a Pyrex cup
- Once melted, add the black soap
- Mix until it's homogenous
- Pour hot mixture into a glass container
- Seal and label

To use: Use a soft rag to polish furniture with the wax

Those are the recipes you are most likely to use on a regular basis to clean around your home. Now onto tricks & tips!

Other cleaning recipes & tricks

Floors & Carpets

Linoleum & vinyl floors

Mix 1 cup of vinegar, 2 gallons warm water, and club soda in a bucket. Clean with mop.

Wood floor rinse

Mix 1 cup of vinegar with 1 gallon of water. Clean with rectangular mop to neutralize odors on wood floors

Stinky carpet

Sprinkle baking soda over the carpet. Let it sit over night. Vacuum in the morning.

Stain on carpet

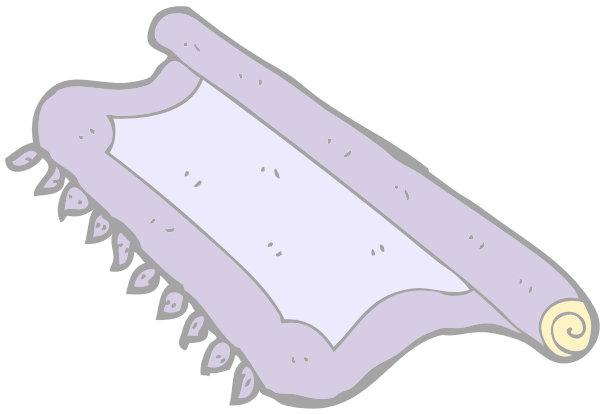
Blot. Spray the stain with vinegar & water. Lay a damp rag over it. Run iron with steam setting for 1 min. Scrub out with new rag (that isn't hot…).

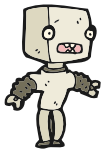
Carpet spill absorber

Generously sprinkle cornstarch or cornmeal. Leave it 15 min. Vacuum. Scrub the rest with a damp rag.

Grease stain on rug

Cover with Terre de Sommières or talc-free baby powder. Leave several hours. Don't scrub it. Next day, wash it with a damp rag.





Metals:

Metal Cleaner

Rub wood ashes or toothpaste onto the metal with a damp rag to polish.

Tarnish Remover

Soak the metal in vinegar, then rinse.

Stainless Steel

Apply baking soda with a damp cloth to the stainless steel. Finish up with vinegar.

Unwanted smells:

Lemon air freshener

Cut 4 lemons into quarters. Put them in a pot with water and cover it. Simmer for 1 hour. The fresh lemon smell will freshen your home.

Musty smells

Leave out a small bowl of baking soda in the room

Moth Repellent

Spray water mixed with cedar essential oil in your closet to repel moths

Car Deodorizer

Sometimes our long work commute might mean that we live in our car a lot… Put baking soda in a small Mason jar and add 15-20 drops of the essential oils of your choice. Cut a piece of paper the size of the lid and poke holes in it. Use the jar rim to secure the piece of paper to the top of the jar. Place the jar in a secure place in the car.

Other

Multi-purpose Cleaning Paste

This paste can be used to protect and polish silverware, copper, chrome, stainless steel and ceramic glass. It is also an efficient cleaning agent for gas stoves and the oven.

Ingredients:

- 7 oz (200 g) of Terre de Sommières
- 1 cup of Marseille soap, finely grated
- 30 drops of mint or eucalyptus essential oil
- 2 tbsp. of baking soda
- A tiny bit of water so that everything sticks together and makes a paste

Steps:

- Mix everything and let it dry until the paste becomes hard.
- Put it in a glass jar.
- Label and store safely.

To use: Apply with soft rag to metals or dirty surfaces.

Leather Polish

This polish is meant for leather furniture or clothing that needs to be revived! Test this polish on a small discreet piece of the leather before using it all over.

Ingredients:

- 1 part linseed oil
- 1 part vinegar
- Glass jar

Steps:

- Boil the linseed oil.
- Add the vinegar once cool
- Mix and transfer to jar

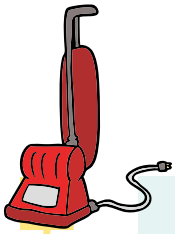
To use: Apply with a soft cloth. Test a small discreet area first.

Leather Scuff Marks

Lightly use a pencil eraser to remove the marks.

Scouring Paste

Mix 6 parts of baking soda with 1 part of Castile soap. Apply with sponge.



Cleaning dusty ceiling fans

Make sure it's safe to do this with your particular ceiling fan model first. If you are about to clean your pillowcases, first cover the ceiling fan blades with them. Turn the fan on. The dust will fall into the pillowcases. Shake them out and wash.

Refurbishing Wood

Sprinkle baking soda on your old wood furniture that needs refurbishing. Scrub lightly with a soft damp cloth.

Grease Stain on Couch

Gently blot the stain with a cotton rag to remove the excess grease. Sprinkle Terre de Sommières clay. Let it take action for several hours. Remove with vacuum cleaner. Wipe off with dry rag.

Cleaning Nooks & Crannies

Dip an old sock in water & vinegar. Put the sock on like a glove. Clean small hidden spaces or window blinds with this.

Computer or TV screens

Mix 1 part vinegar with 2 parts of water. Dip soft cloth in liquid. Make sure it's damp, not wet. Wipe computer with soft cloth, then dry with a second cloth.

Computer Keyboard

Turn your computer off. Wipe the keyboard with a paint brush. Dip Q-tip in vinegar. Make sure it's damp, not wet. Clean the keyboard.

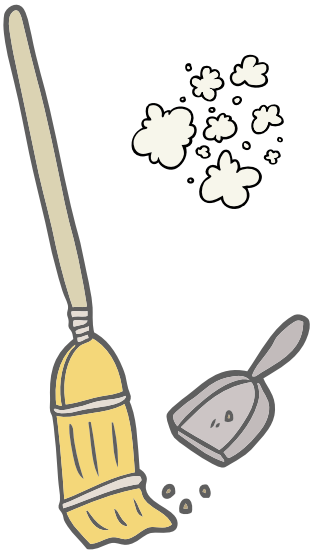
Cleaning Tips for Living Areas:

- Dust often & consider air-cleaning plants to avoid sick building syndrome or developing or aggravating existing respiratory problems.

- Dust first, then sweep or vacuum the floors when the dust has fallen.

- Take your shoes off when you enter the house and ask guests to do the same. This will save you a lot of time sweeping or vacuuming.

- A child's room should not be sterile, but it does need to be sanitary. Make sure the changing station is wiped down after every use. Children tend to bring a lot of messes to their rooms – make sure to clean up crumbs often to avoid attracting pests.



Living Areas Gear Checklist:

Supplies:

- Broom and dustpan ☐
- Vacuum cleaner ☐
- Extendable duster ☐
- Small rags ☐
- Soft rags ☐
- Floor mop ☐
- Large Bucket (or sink) ☐
- Sponges ☐
- Gloves ☐

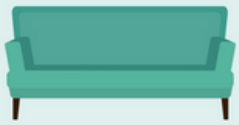
Homemade Products:

- Multi-purpose cleaner ☐
- Floor cleaner ☐
- Window cleaner ☐
- Air freshener options:
  - Tea tree oil spray ☐
  - Vaporizer ☐
  - Pot-pourri ☐
- Wood polish ☐

LIVING AREAS CLEANING CALENDAR

1. DAILY:

- Pick up after yourself (or your kids/pets) daily
- Make beds
- Clean up messes as they occur

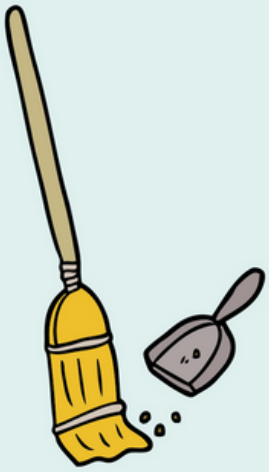


2. WEEKLY:

- Dust your home
- Sweep/vacuum and mop floors
- Aerate entire house

3. MONTHLY:

- Vacuum curtains and under furniture
- Vacuum and turn mattresses
- Shake out rugs
- Air out pillows
- Clean windows
- Check cleaning supplies
- Check home for pests



4. BI-ANNUALLY:

- Change air filters
- Wash rugs
- Polish wood
- Clean out closets

HOMEPLAY

You've made it! This is the very last area to work on. Here are the essentials of what you'll want to do:

- Make your 5 living room cleaning essentials (consider inviting a friend along!) ☐
- Go over your living areas supplies checklist ☐
- Consider printing or writing down your living areas cleaning calendar ☐
- Keep this book handy in case you ever need to use the tricks or more recipes ☐

GREEN CLEANING

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CHAPTER 15

THANK YOU!

Congratulations, you made it! We hope this book has motivated you to start making your own nontoxic cleaning products from scratch and to phase out toxic cleaners. Remember, the toxic-free adventure doesn't have to stop here: spread the word about what you've learned to your friends, invite them for a DIY cleaning products party, and take action in your local community! Speak up! Get involved with a local Savvy Women's Alliance chapter (or start one!) to learn more, share about nontoxic living, and detox other areas of your life (cosmetics, food, etc.). And if you've enjoyed this book, check out the online workshop that accompanies it!

We hope we have inspired you to clean your home with safe products that will bring you peace of mind. Remember you can always refer to this book for information on ingredients, recipes, tricks, recommended gear, and safety instructions!

We sincerely hope you'll stay in touch through our online platforms on Facebook, Instagram, and Pinterest. And remember to be kind to yourself! Sometimes, life gets in the way. So, if you're hosting a dinner party but have no time to clean, just ask your guests to bring dark socks and low expectations.

With love,

Christelle & Cristina

Resources for Non-Toxic Living

Nonprofits:

Savvy Women's Alliance https://www.savvywomensalliance.org/
Environmental Working Group | Guide to Healthy Cleaning https://www.ewg.org/guides/cleaners#.WyI6q6mLm1s
Women's Voices for the Earth https://www.womensvoices.org/
Safer States http://www.saferstates.org/
Center for Environmental Health https://www.ceh.org/
Healthy Stuff https://www.ecocenter.org/healthy-stuff
Safer Chemicals, Healthy Families https://saferchemicals.org/
Breast Cancer Prevention Partners https://www.bcpp.org/
Silent Spring Institute https://silentspring.org/
Turning Green http://turninggreen.org/
David Suzuki Foundation https://davidsuzuki.org/
Less Cancer https://www.lesscancer.org/

Magazines:

Mother Earth News https://www.motherearthnews.com/
Permaculture Magazine https://www.permaculture.co.uk/

Documentaries:

Stink! https://stinkmovie.com/
The Human Experiment http://thehumanexperimentmovie.com/
Unacceptable Levels https://www.imdb.com/title/tt2273669/